ILLINOIS

July, 1945

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In This Issue

Carcinoma of the Larynx; Diagnosis and Treatment

✦

Treatment of Subacute Bacterial Endocarditis - Recovery With Penicillin

✦

---- and others

✦

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pollen bombardment

GONE are the days when hay fever victims piled the family into the car at the first sneeze—and headed for pollen-free areas.

This year the majority of the estimated 3,000,000 hay fever sufferers will have to "sit tight and take it" when the pollen bombardment gets under way.

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SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

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The Illinois
Medical Journal

July, 1945
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Official Journal of the Illinois State Medical Society

EDITOR — Harold M. Camp. EDITORIAL BOARD — James H. Hutton, Chairman, Frederick H. Falls, Josiah J. Moore, Edwin M. Miller, Chauncey C. Maher, Harry S. Gradle, Harry Culver, Walter Stevenson, Raymond W. McNealy.

Editorials

THE JOB IS ONLY HALF DONE

Too many people have believed that, with the fall of Germany and the complete occupation of that nation by our allied troops, the war is practically over. One needs only to review the hardships encountered on Okinawa by our troops and the thousands of casualties in addition to an unusually high mortality rate from combat suffered by the United States army and navy, to thoroughly realize that the closer we get to the Japanese mainland, the more difficulty we shall encounter.

No one today doubts the final outcome, but it will not come easily as many have predicted. We shall most likely see additional war loan drives after the Seventh is complete and its quota reached. Likewise many thousands of medical officers will be needed until the enemy has been completely crushed. Several releases have appeared recently relative to release of medical officers from the services. It seems quite probable that some will be returned to civilian life, although but little information of definite nature has been received.

With approximately 4,500 Illinois physicians with the armed forces, it is quite obvious that the men remaining in civilian practice will continue to carry the unusual burdens in medical care for some time to come. They will welcome the return of those who have served their country well during the trying years since the assault on Pearl Harbor.

There are many casualties from the European fronts remaining under medical care and no doubt many thousands will continue to be in army and navy hospitals for some time to come. They must be given the best of care by the medical personnel until able to be released. Now that the European war has been brought to a successful conclusion, many stories are being told relative to the work of the medical corps and the excellent long range planning before advancements were to be made. Recent reports from the offices of the Surgeons General emphasize the previously unheard of low mortality rates in this war, which is highly complimentary to the medical officers who are not limited to any stated number of hours on duty in any day.

Reports have been received from all Illinois counties giving information desired by the A. M.A. Bureau of Information and we hope to be able to give every consideration to those returning medical officers desiring a suitable location where they can establish a practice.

Many of these men have not been in practice previously and will need more assistance than most of the older physicians. They too will receive every possible consideration and every effort will be made to give them accurate information relative to desirable locations.

In the meantime those remaining at home will endeavor to carry on to the best of their ability. We will all have great cause for rejoicing when the job is completed in the Pacific.

POST-GRADUATE CONFERENCE AT MAYO GENERAL HOSPITAL

Doctors of Western Illinois met for a post-graduate conference sponsored by the Post-Graduate Committee of the Illinois State Medical Society and arranged by the Mayo General Hospital at Galesburg.

Through the courtesy of Colonel Henry L. Krafft, Commanding Officer of Mayo General, it was possible for the visiting physicians to make a tour of the hospital escorted by Lt. Col. Bowers from 10:00 to 11:30 A. M.

The following programs were carried on during the morning:

SURGERY

ORTHOPEDIC

10:00 A.M. to 10:45 A.M. — Capt. Russell, Major Farrington, Lt. Col. Lewin
Subject: "Complicated Fractures of the Femur"

10:45 A.M. to 11:30 A.M. — Lt. Johnson, Major Farrington, Lt. Col. Lewin
Subject: "Complicated Fractures of the Humerus"

VASCULAR

10:00 A.M. to 10:45 A.M. — Capt. Carter, Major Shumacker
Subject: "Arteriovenous Aneurysm"

10:45 A.M. to 11:30 A.M. — Capt. Murray, Major Shumacker
Subject: "Peripheral Vascular Disease Requiring Sympathectomy"

NEUROSURGERY

10:00 A.M. to 10:45 A.M. — Capt. Ulin, Capt. Speigel
Subject: "Intervertebral Disc and Cranial Defects"

10:45 A.M. to 11:30 A.M. — Capt. Ehrlich, Lt. Stoll, Capt. Speigel
Subject: "Peripheral Nerve Injury"

MEDICAL

MEDICAL VASCULAR

10:00 A.M. to 11:30 A.M. — Capt. Abramson
Subject: "Peripheral Vascular Cases"

DERMATOLOGY

10:00 A.M. to 10:45 A.M. — Capt. Bloom
Subject: "Dermatological Cases"

CARDIOLOGY

10:45 A.M. to 11:30 A.M. — Capt. Christy
Subject: "Cardiac Cases"

At 12:30 the visiting doctors were entertained at a complimentary buffet luncheon at the Hotel Custer given by the members of the Knox County Medical Society.

The following program was presented during the afternoon by members of the Mayo General Hospital Staff:

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State Society will pay no bills for legal services except those contracted by the Committee. Notify the Chairman at once. Do not employ attorneys.

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1:30 P.M. Four papers presented by:
Capt. Leo A. Kaplan
Subject: "Psychiatric Factors Delaying Recovery"
Capt. David I. Abramson
Subject: "Thrombophlebitis"
Major Harris B. Shumacker
Subject: "Traumatic Aneurysms"
Lt. Col. Philip Lewin
Subject: "Fractures of the Upper Shaft of Femur"

4:30 P.M. Each speaker headed a panel discussion. In addition, there was a panel discussion by Capt. Charles M. Schroeder and Capt. Norman T. Welford — "Use of Penicillin"

Dinner was served at 6:30 followed by a symposium on "Ruptured Intervertebral Discs" by Major Richard E. Kinzer presenting the x-ray aspects and Captain I. Joshua Speigel discussing the surgical aspects.

The meeting was well attended with about one hundred registering. The Post-Graduate Committee very much appreciated the interest and cooperation given by the officers and staff of the Mayo Hospital without which such a successful meeting would have been impossible.

CANCELLATION OF THE 1945 ANNUAL MEETING

At the regular June meeting of the Council official action was taken which cancels the annual meeting of the Illinois State Medical Society for 1945. Rulings of the Office of Defense Transportation made it unwise for the Illinois State Medical Society to even apply for the privilege of meeting this year. We will, however, try to hold a meeting of our House of Delegates this August, and when more information is available, all members of the House will receive official notice, and articles will appear in the Illinois Medical Journal.

SCIENTIFIC PROGRAMS

At this time we would like to call the attention of the members of this Society to the planning and work carried on by the General Chairman of the Committee on Arrangements, Dr. Chauncey C. Maher, and his local committees, all of whom worked under the definite handicap of uncertainty.

The officers of the various Sections have carried on and planned an excellent program to assure our membership of the customary high standards we have come to expect. We are asking all physicians who were scheduled to present papers to prepare them for publication in the Illinois Medical Journal. During the coming year you will have the privilege of seeing these presentations in your Journal. If possible a "Section Summary" will be published to illustrate the type of program which had been prepared for your pleasure and education. We will list the speakers and the subject on which they had planned to talk.

TECHNICAL EXHIBITORS

We also want to call your attention to our list of technical exhibitors who have all been notified that we will be unable to hold our 1945 meeting. Some four or five of this list had cancelled their reservations for booths in order to cooperate fully with the Office of Defense Transportation, even before we notified them of our own decision in the matter.

Many of these old friends have written and assured us that they hope to be present when we are able to hold our annual meetings again. We wish to take this opportunity to thank them for their continued cooperation, and assure them that they will be most welcome at future gatherings of the Illinois State Medical Society.

Abbott Laboratories, North Chicago
A. S. Aloe Company, St. Louis, Mo.
The American Hospital Supply Company, Chicago
The Ames Company, Elkhart, Indiana
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Hospital Liquids, Inc., Chicago

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Westwood Pharmacal Corporation, Buffalo, N. Y.
White Laboratories, Inc., Newark, N. J.
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Wyeth, Inc., Philadelphia, Pa.

ILLINOIS PHYSICIANS GET AROUND

Illinois physicians, members of the Illinois State Medical Society, have appeared before many other state societies and presented papers on their various specialties. During the month of May numerous articles by our colleagues have appeared in medical print throughout the country. A quick glance through various exchange Journals in the editor's office reveals the following list published here for your information.

"Inversion of the Uterus. The Attending Physician's Responsibility for Immediate Replacement" — Channing W. Barrett, M.D., Chicago. May, 1945 Western Journal of Surgery, Obstetrics and Gynecology.

"The Present Status of the Prostatic Problem" — Herman L. Kretschmer, M.D., Chicago. May, 1945 Ohio State Medical Journal.

"History of Pellagra in the United States" — Paul S. Carley, M.D., Sparta. May, 1945, The Urologic & Cutaneous Review.

"Obstetrical Hemorrhages" — Frederick H. Falls, M.D., Chicago. May, 1945 Journal of the Michigan State Medical Society.

"Venous Thrombosis" — Geza de Takats, M.D., Chicago. May, 1945 Kentucky Medical Journal.

"Peripheral Vascular Disease" — Geza de Takats, M.D., Chicago. May, 1945 Journal of the Michigan State Medical Society.

Medical Economics

The Medical Economics Committee — Chauncey C. Maher, Chmn., 6 North Michigan Avenue, Chicago, Edwin S. Hamilton, V. Thomas Austin, Emmet B. Bay, Jay McDonald Milligan, Jacob M. Mora, George Halperin, Marie Wessels, Thomas C. Browning, Roland R. Cross, Milton E. Bitter, Edwin F. Hirsch, Ford Hick, Lt. Col. MC, William J. Bryan, John R. Vonachen.

MEDICAL EDUCATION

To a student of sociology the most remarkable feature of American progress is the rapid growth of our institutions. This is as true of medical education as it is of many other activities. Medical education fifty years ago was chaotic. From the exclusive Johns Hopkins, whose entrance requirements were higher than those of most European medical schools, the educational requirements ranged to the lowest level. Day schools and night schools offered diplomas. The only requirement for enrollment in most of these was the ability to pay tuition. This situation was disgraceful. From this low level medical education has been elevated to a standard that now is probably the highest in the world. This transformation was not brought about by government regulation but by the better medical schools, the universities, and the medical societies. An important part in raising the standards of medical education was played by the American Medical Association. The Association created the Council on Medical Education and Hospitals in 1904. Through its efforts the diploma mills and the poorly qualified schools were eliminated. This truly remarkable progress, in which the American Medical Association and its Council on Medical Education and Hospitals played so important a part, was achieved through methods of education and persuasion and not by coercion.

The essentials of an acceptable medical school as defined by the Council on Medical Education and Hospitals and approved by the House of Delegates of the American Medical Association, June 12-16, 1933, specify requirements of organization, administration, faculty, buildings, clinical facilities, resources, requirements for admission and curriculum.

The Council on Medical Education and Hospitals of the American Medical Association in setting up minimum requirements for entrance to approved medical schools does not specify the number of hours required but rather refers to satisfactory courses, such as English, theoretic and practical courses in physics, biology, and general and organic chemistry. While the Council's minimum requirement is two years of collegiate training including the subjects mentioned, three years or more in college have been recommended. Some medical schools have additional requirements and others require a specific number of semester hours in all required subjects.

For the guidance of prospective medical students and admitting officers, the Council publishes annually a compilation of colleges of arts and sciences approved by the following agencies: Association of American Universities, Middle States Association of Colleges and Secondary Schools, New England Association of Colleges and Secondary Schools, North Central Association of Colleges and Secondary Schools, Northwest Association of Secondary and Higher Schools, Southern Association of Colleges and Secondary Schools. This list may be obtained for five cents from the Order Department of the American Medical Association. Medical Schools sometimes accept applicants who have fulfilled the requirement in American and Canadian institutions not approved by the agencies mentioned, provided the applicant gives evidence of superior ability. Prospective medical students should secure their premedical training in col-

leges of this list. Since success in the medical curriculum demands more than average intelligence and industry, the college student who is not in the upper third of his class should seriously question the advisability of starting a medical career.

In 1931, the Association of American Medical Colleges passed a resolution recommending aptitude tests as an additional guide in the selection of students. Many of the schools base their decisions in part, on the aptitude scores.

Medical Education

Sixty-six approved medical schools in the United States offer the complete medical course. Ten schools for the basic medical sciences are developing four year programs, started in 1943, but now are approved only as schools for the basic medical sciences.

Schools which offer only the first two years of the medical curriculum are designated as schools of the basic medical sciences. The majority of these schools are in small communities where the material required for clinical teaching is limited. In some schools, facilities for teaching satisfactorily such subjects as physical diagnosis and gross pathology must be sought elsewhere. Introductory courses in medicine and surgery which commonly form a part of the second year schedule also have this disadvantage. Officers of these schools assist their students to secure enrolment in four or five medical schools in order to complete the medical curriculum.

Six medical schools in the United States require a year of internship or research as a part of the medical course, thereby lengthening the course to five years.

The standard curriculum recognized by the Council on Medical Education and Hospitals and contained in its Essentials of an Acceptable Medical School is as follows:

Curriculum. The entire course of four years shall consist of from 3,600 to 4,400 hours, distributed in from 900 to 1,100 hours per year, and shall be grouped as set forth in the following schedule, each group to be allotted approximately the percentage of hours of the whole number of hours in the courses as stated. Table 1.

When the teaching conditions conflict, a subject may be transferred from one division to another.

TABLE 1

	Hours	Per Cent
1. Anatomy, including embryology and histology	14	18.5
2. Physiology	4.5	6
3. Biochemistry	3.5	4.5
4. Pathology, Bacteriology and Immunology	10	13
5. Pharmacology	4	5
6. Hygiene and Sanitation	3	4
7. General Medicine	20	26.5
Neurology and psychiatry		
Pediatrics		
Dermatology		
8. General surgery	13	17.5
Orthopedic surgery		
Urology		
Ophthalmology		
Otolaryngology		
Roentgenology		
9. Obstetrics and gynecology	4	5
Total	76	100
Electives	24	0

The Accelerated Program

Medical schools of the United States have recognized that the national war emergency has created the need for a larger number of well qualified physicians. All medical schools have initiated an accelerated program to increase the supply of physicians for the Army, the Navy and the civilian population. The plan provides for the utilization of the long summer vacation as a teaching period and, by continuing the schedule throughout the calendar year, the four acadmeic years of the medical course are completed in three calendar years.

Sixty-three four year schools have adopted the accelerated curriculum involving both the acceptance of entering students and the graduation of a class every nine months. One school will graduate a class every nine months during the next three years but will admit entering classes on an annual basis. The university of Tennessee College of Medicine will continue to operate on the four quarter plan which provides for the admission of students at any quarter and the graduation of students quarterly. The Woman's Medical College of Pennsylvania, which is on the accelerated program for the junior and senior years only admits new first year students once a year. All ten schools of the basic medical sciences have adopted an accelerated program.

Student Enrollment

As a war measure, the medical schools of this country have increased the size of their entering

classes by approximately 10 per cent. They have adopted an accelerated program which provides graduation of a class every nine months and sixty-three four year medical schools will accept entering students every nine months. According to estimate, more than 20,000 students will be graduated from the medical schools of this country between July 1, 1942 and July 1, 1945, or about 30 per cent more than would have been graduated without the adoption of the accelerated programs and increased enrollments.

Military Service

The Army and Navy have contracted with practically all medical schools to provide instruction to students in the Army Specialized Training and Navy V-12 Programs. Approximately 80 per cent of the places in medical schools have been occupied by soldiers and sailors assigned to this work. These include physically qualified men now in medical schools or admitted to classes commencing the medical work in 1944. These men are selected from A.S.T.P. and Navy V-12 premedical groups by the Army or Navy in close collaboration with representatives of medical colleges and the premedical schools. Such students are in uniform and receive base pay, tuition and other expenses. In all except a few schools, Army students receive allowances and live where they wish. No Navy students are housed in barracks.

Approximately 20 per cent of the places in medical schools under Army and Navy contract remain for civilian applicants, who apply for admission as in peace times.

The curriculum is unchanged, except that acceleration is compulsory for all Army and Navy students.

Upon completion of the medical course, Army and Navy students are returned to inactive status with reserve commissions for the internship. Students select their own internships and hospitals their own interns, as before.

Internship

Practically all medical students plan to serve an internship in a hospital following completion of the medical course. An internship is required for the M.D. degree by six medical schools in the United States. The state licensing boards in twenty-two states, the District of Columbia, Alaska, Hawaii and Puerto Rico require that all applicants for licensure shall have served a hospital internship. While some of the bodies named above have their own lists of hospitals recommended for intern training, generally the Council's list of Hospitals Approved for Internships is followed. A copy of this list is available on request.

For the duration of the war, the internship period will be nine months, with provisions for additional hospital work as assistant residents and residents for selected men holding reserve commissions. Two-thirds of the commissioned men may expect to enter active duty as medical officers after completion of a nine-month internship.

There are four medical schools in Chicago. The requirements for admission, the curriculum and the general course are patterned very much in accordance with the plans described.

G.H.

PENICILLIN IS USED SUCCESSFULLY IN INFECTIOUS DISEASE FROM PARROTS

The first successful use of penicillin in the treatment of human psittacosis, an infectious disease of parrots which is transmissible to human beings, is reported by three Philadelphia physicians—Harrison F. Flippin, Michael J. Gaydosh and William V. Fittipoldi—in the May 26 issue of *The Journal of the American Medical Association.*

The doctors report the case of a 52-year-old woman who contracted the disease after being bitten on the finger by a parrot. She suffered a migratory type of pneumonia which failed to respond to the sulfonamides. Penicillin treatment was instituted on the 19th day of illness, and there was a definite improvement within 36 hours.

The disease, caused by a virus, was practically unknown in this country until a number of cases were reported in 1929-30. The majority of patients at that time gave a history of close contact with parrots or with sick love birds. It is believed that the infection incurs by inhalation. The mortality rate in different outbreaks has averaged about 20 per cent.

State Department of Public Health

STATISTICS AND HEALTH PROGRESS

The average length of life of the American people in 1942 corresponding to the mortality conditions then current was 64.8 years while in 1900 life expectancy at birth was only 49¼ years. Thus it is possible to summarize in a single sentence the entire effect of over 40 years of progress in methods for the protection of life. The function of *vital statistics* is in part to produce such succinct evaluations of the multiplicity of events as those represented by all the births and all the deaths which took place in a 43 year period. It also devolves upon the science of vital statistics to show how and why the life span has been extended and what may be reasonably expected in the near future.

Through the analysis of all the births, deaths, and morbidity from notifiable diseases the vital statistician is able to focus attention on what are the problems in the protection of life and the prevention of disease and other physical disablements. As such, vital statistics are recognized as the essential tool in forging public health policies and in allocating public health resources. It is for this reason that in the United States the registration of births and deaths has been made the responsibility of public health authorities. In many states the registration of marriages (and divorces) is also carried out by health departments in order that the statistics of this important event in the human life cycle may be available for analysis in conjunction with the other vital data. (Unfortunately in Illinois meaningful marriage statistics cannot be had because the records are kept by the county clerk of each county along with a multitude of other kinds of records in his charge.)

While births, deaths, morbidity, and marriage together with the enumeration of the population form the basic vital data from which vital statistics are drawn, there is also a large body of statistical information which originates as by products of official public health activities. Among these are the distribution of medical, hospital, and other health facilities; the levels of immunity to certain diseases and the levels of sanitation in various areas; the industrial hazards to life and health in certain communities; the extent and distribution of public health activities. Health departments find it necessary to correlate all these diverse kinds of information in order to conduct their work in the most effective way.

The development of co-ordinated health statistics to include all these related types of health information is in its infancy. The need has long been recognized, but facilities have been lacking. First, it is necessary to have vigorous *local* public health departments. The existence of such organizations is in turn dependent upon an alert medical profession and an enlightened public opinion. Second, it is necessary to have a high-grade, modern state health department capable of co-ordinating the work of the local organizations, sustaining them in their development, setting standards of health protection, making known the progress in medical science and public health methods, and defining the over-all health problems. Third, it is necessary that well trained statistical personnel as well as physicians, dentists, nurses, and sanitarians be available to both the local and the state organizations. The full development of statistical services necessarily lags behind that of the direct health

services because refined knowledge of conditions and problems is hardly necessary when every recognizable problem is a major one and rule-of-thumb methods bring gratifying results. Also, good statistical services just as good medical services cost money. Since the costs of statistical service are an "overhead" expense, it is little wonder that statistical practice in public health lags far behind the theoretical development of the act.

Wherein do public health statistics concern the medical profession at large? Why should the private practitioner give them even second thought? Does not the specialist have enough trouble keeping abreast of his specialty while the general practitioner almost futilely struggles to keep sufficiently informed on a modicum of the specialties? The answer must of course be: "Yes, but —." In the first place, every private practitioner has a direct stake in public health since the sphere of public health activity is in those areas of medical service which cannot be handled by the individual practitioner nor by voluntary groups of practitioners alone. It is therefore necessary for the practitioner to understand as much as he can about what the public health problems are and what the public health authorities are doing about them. Statistics properly presented give the answers in a nutshell. Secondly, the vital statistics of births, deaths, and morbidity correctly interpreted give him the knowledge whereby he can orient himself in the general conditions surrounding him in his practice and in the community. Finally, he is the primary source of vital data since it is the private practitioner who reports the births he attends, the deaths of his patients, and the cases of infectious disease which present themselves.

Although duty is not as fashionable a concept nowadays as in 1908, the engaging arguments of Dr. H. B. Hemenway of Evanston[1] as to the duty of the physician to faithfully report births, deaths, and morbidity from contagious disease still hold. Dr. Hemenway makes the point (1) that every physician is a quasi public official, (2) that under the law he is required to make such reports, and (3) that he should comply with the spirit of the law. While completeness of reporting on the part of physicians is now far better than in 1908, there is still a noticeable lack of compliance with the spirit of the law. Under the law the medical certificate of death should "furnish such information as may be required by the Department of Public Health in order to properly classify the death." Nevertheless, careless statements as to the cause of death are all too frequent and a reliable determination of the basic or underlying cause of death is impossible. Too much information is as bad as too little when the medical certificate merely inventories all the pathological conditions found on autopsy without an opinion rendered either by the pathologist or the clinician. Nor has the recent progress in standardization of the nomenclature of diseases and operations been observable in the statements of death causes on the medical certificate. For a proper understanding of registering both births and deaths each physician should have available for reference a copy of the handbook[2] published by the U. S. Bureau of the Census and available free of charge from the State Department of Public Health. This little book states briefly the purposes of registration and gives a simple discussion on the medical certification of cause of death together with a complete tabulation of the International List of Causes of Death.

Until physicians generally recognize their responsibility for accurate and conscientious reporting, no amount of skill on the part of the statistician can compensate for the deficiencies in the basic data which result from inadequate reporting. Progress in good vital statistics depends on the progress of the medical profession in effective diagnosis and its use in preparing the medical certification of death. Progress of this sort has been definite and it is gratifying to see the excellence of the certifications coming from the outstanding medical centers and from the younger members of the profession. As the original information improves, it will then become possible to answer whether the incidence of cancer is increasing commensurately with the increased death rates therefrom, or whether the increase means only better recognition of the disease.

[1] H. B. Hemenway "Public Duties of Physicians" Illinois Medical Journal, January 1909. Read before the Chicago Medical Society, Nov. 11, 1908.

[2] U. S. Bureau of the Census: "Physician's Handbook on Birth and Death Registration" U. S. Government Printing Office, 1939.

Where should we look for health progress now? Life expectancy statistics show that while white females at birth can expect 68.6 years of life, the colored female has an expectancy of only 58 years. Similarly, white males have an expectancy of 63.6 years as opposed to only 54.3 for the colored. This we recognize as not merely a medical problem, but also a socio-economic one. In any event, much can be done and undoubtedly will be done. And what about our babies? The child at the age of one can expect 66.6 *additional* years of life while at birth his chances are for only 64.8 years. Thus despite the great progress in curbing infant mortality, we still find a big problem both for medical research and for medical practice. The human cost of reproduction has dropped amazingly to a little more than one-third of the cost in 1929. But over one-third of the current maternal mortality of less than 2 per 1,000 live births is attributable to puerperal septicemia. Tremendous progress has been made in eliminating infectious and contagious diseases as numerically important causes of death but we nevertheless still find mortality from diseases largely preventable. While we must accept with resignation the greater increase of death from degenerative disease as the price of our lengthening life span, we are still confronted by the too frequent deaths from rheumatic fever in the younger age groups and its disabling and fatal effects in those who survive the initial course of the disease. Your vital statistics will measure the extent of progress with these health problems and will continue to point out the new areas for work as the older problems approach their solution.

PUBLIC HEALTH NURSING IN THE STATE DEPARTMENT OF PUBLIC HEALTH

Public Health Nursing was a part of the Division of Child Hygiene from 1919 to 1941. In August of 1941, Dr. Roland Cross, the Director, established a separate Division of Public Health Nursing, and it therefore took its place as one of the several Divisions of the Illinois Department of Public Health.

All public health nurses employed by the Department come under the technical supervision of the Division. The staff includes, in addition to the Chief Supervising Nurse, an Educational Director, and nine advisory and consultant nurses. The consultant nurses serve such special fields as tuberculosis, venereal disease, industrial hygiene and maternity and infancy hygiene. Through these nurses, assistance is given the field staff of public health nurses who number 120. These field nurses serve in county or district health departments and are administratively responsible to a county or district health officer.

The Division of Public Health Nursing also carries on a continuous program of staff education designed to meet the needs of all public health nurses in the state. It sets standards in public health nursing and assists in maintaining them. The recruiting of possible applicants for public health training is also another activity of this Division.

Nurses comprise the largest single professional group engaged in public health work. At the present time, there are 1250 employed in Illinois, working in various public health nursing fields, including those services financed by the official agencies; namely, the state, city and county health departments, county tuberculosis sanitorium boards, boards of supervisors and boards of education, and those serving under private or unofficial agencies such as visiting nursing associations, tuberculosis associations and insurance companies. There are nurses employed by industrial plants.

The first public health nursing was limited to the care of the sick in the home, but with the newer developments in the field of preventive medicine, the service has been extended to include teaching in simple terms the important scientific principles of sanitation, prevention of disease and healthful living. Today, public health nursing services embrace activities for all age groups from prenatal and maternity through infancy, preschool and school age and adult life.

The public health nurse is now well established in this country and most communities accept her and her services as essential to the well being of their citizens. The generally accepted standard which we should like to achieve is one public health nurse for each 2,000 persons in the general population. Few communities have reached this goal, but when the war is over, the possibilities of expanding health department services are most encouraging.

The trend in all public health nursing services is toward a generalized nursing program. The specialized plan has been the more common form of service in Illinois in the past and has proven valuable in demonstrating results, but the generalized plan has been widely recognized as the more complete form of service to families of the community, while at the same time preventing duplication of service and an extravagant use of nurse power.

With the entire family as the unit, the same nurse may give service in communicable disease, venereal disease, tuberculosis, antepartum, delivery, postpartum, infant, preschool, school, and adult hygiene, morbidity service and crippled children service.

Nurses who are employed by the State Department of Public Health must meet the qualifications set up by the Civil Service Commission for the various classifications of positions.

The public health nurse must be a registered nurse and she must have special training in public health nursing at a university before she is qualified to enter the public health nursing field. In the State of Illinois, public health nurses who are paid from public tax funds are required to take an examination for certification as a public health nurse. This is a legal requirement and is under the supervision of the Department of Registration and Education. Certification requires a minimum of one semester's academic work in an approved school of public health nursing and one year of field experience in public health nursing under the supervision of a registered and certified public health nurse.

The Department of Public Health has given scholarships to desirable applicants for public health training ever since Social Security funds were available in 1936. Since that time, two hundred registered nurses have been given training, spending from four months to a year in a school of public health.

Since medical service is involved in every type of public health nursing activity, the appointment of a Medical Advisory Committee is one of the necessary first steps to be taken in the establishment of any program of public health nursing. The County Medical Society usually selects this committee from among its members.

Meetings are planned at frequent intervals with the Medical Advisory Committee in order that the physicians may have an opportunity to give constructive leadership and help in respect to program planning and the proper shaping of medical policies and procedures. All nursing techniques are approved by the committee and careful plans made with them for such programs as medical examinations, immunization campaigns, etc.

In all services which the public health nurse renders, she relies upon the physician for medical care and guidance. She stands ready at all times to aid him in giving skilled nursing care to the patient in his home and to assist him in program planning to meet the health problems of his community and prevent unnecessary disease and death.

DIPHTHERIA VANISHING IN ILLINOIS

In 1920 there were 14,375 cases of diphtheria reported in Illinois. In 1944 there were only *314* cases reported. During the five years ended with 1924 a total of 67,930 cases was reported. During the five years ended with 1944 the total reported was 3,592. This remarkable contrast is the result of the cooperative efforts of the medical profession and the public health agencies of the State in the immunization of children against diphtheria.

The record compares favorably with the experience in certain foreign countries during the war from which reliable information is available. More than 900 children died from diphtheria in England and Wales during the European part of the war, for example. This is a larger number than that of children killed by bombing in England and Wales. Likewise in Norway diphtheria caused widespread illness and heavy mortality after the German occupation. Immunization had been neglected in both England and Norway.

In Illinois the program against diphtheria has been cooperative from the outset. Most of the medical work of giving toxoid has been done by private practitioners, much of it in their offices. The State Department of Public Health has provided toxoid free of local cost. It has carried on educational campaigns unceasingly to encourage parents to have their children immunized. Local health departments have been active in this way also. The State has provided free laboratory service for the diagnosis of diph-

theria. Through this general effort the record referred to above has been achieved.

In the last five years the number of case reports per year has varied from 940 to 314, the latter being the lowest on record. Most of the incidence has resulted from local epidemic outbreaks, sporadic in character. The reason for this is the lack of local public health machinery. The personnel strength of the State Department of Public Health is not sufficient to carry on the persistent and continuing local programs throughout the State that are needed in order to prevent sporadic epidemics of diphtheria.

This leads inevitably to the conclusion that better local health departments are needed to reduce diphtheria to the vanishing point, as it has been in some states, and to prevent its recurrence. Every generation of children must be immunized as they come along in order to keep diphtheria from appearing again after it has been eradicated from a community. This requires continuous effort on the part of public health workers.

Much the same thing may be said about numerous other diseases such as smallpox, typhoid fever and whooping cough. While the methods of control vary, efforts may never cease without risking the reappearance of any controllable disease.

The development of county health departments is based on this kind of thinking. During the last two years eight counties have taken advantage of the law passed in 1943 which permits the establishment and maintenance of autonomous county health departments. The eight counties are: Adams, DuPage, Edwards, Lawrence, McLean, Montgomery, Morgan and Wabash. In four of these, Adams, DuPage, McLean and Montgomery, the people voted to levy a special tax for the support of the health department. In the other four, the health departments are financed from the general county funds.

FIND RED BLOOD CELLS CAN BE KEPT LONGER IN CORN SYRUP SOLUTION

A wider use in the transfusion of type O blood cells, which are left after plasma is removed from whole blood, is now possible through the discovery that a 10 per cent solution of corn syrup in distilled water serves as a better medium for preservation of these cells than any other solutions so far tried, according to a report of two Red Cross doctors in the April 28 issue of *The Journal of the American Medical Association.* The physicians are William Thalhimer, M.D., Associate Technical Director, Blood Donor Service, American Red Cross, New York, and Major Earl S. Taylor, Medical Corps, Army of the United States, Technical Director, Blood Donor Service, American Red Cross.

These red blood cells, which can be used in transfusions of the wounded in battle without the necessity of determining the patient's blood type, are obtainable in huge amounts by centrifuge in the preparation of blood plasma from the many hospital blood banks and the extensive American Red Cross blood procurement program for the armed forces. While it is recognized that the transfusion of red blood cells serves as well as whole blood for many patients, the main problem has been, they say, "to find a solution for resuspension which will preserve the cells for a long enough time to make their use practical. . . ."

This report is based on 761 transfusions of centrifuged type O cells resuspended and stored in 10 per cent corn syrup up to sixty days and administered to 437 patients, many of whom received repeated transfusions, some daily and some several times a week.

It was found that 10 per cent corn syrup in distilled water successfully preserved the cells for as long as sixty days. Solutions of sodium chloride containing the proper percentage of salts to keep the red blood cells unaltered has been used extensively but is far from ideal, the authors say, "in that it is necessary to administer the saline-suspended cells not later than five days after the blood is obtained from the donor. . . .

"The clinical improvement has been what could be expected from the administration of the same amounts of whole blood of the same age, and the same increase in the patients' total red blood cell count and non-agglutinable (transfused type O cells) red blood cells occurred. Careful observation revealed no unusual or deleterious effects, a low fever-chill reaction rate and the absence of hemoglobinemia, hemoglobinuria or jaundice in any of the patients. . . ."

Correspondence

CARE OF SOLDIERS ON FURLOUGH

Army Service Forces
Headquarters, Sixth Service Command
Chicago 6, Illinois

14 June 1945

Dear Doctor:

Due to the large number of returning soldiers who will be placed on leave and furlough during the next months, civilian physicians will be called upon to care for many illnesses and injuries. In order that the policy which provides remuneration for such services may be disseminated, it is requested that the following regulations governing treatment given under above circumstances be published in the State Medical Journal.

"In order to receive civilian medical treatment at Government expense, military personnel must be on *authorized* leave, pass or furlough in an area in which Government facilities for such treatment are not available within a reasonable distance.

"The physician or hospital rendering treatment must notify *without delay,* by wire or letter, the Commanding General, Sixth Service Command, 20 North Wacker Drive, Chicago 6, Illinois, attention the Surgeon. The notification must give the name, rank, organization and station of the person treated, the diagnosis and the estimated duration of treatment.

"Treatment will be limited to conditions of an acute nature, and no surgical procedures except in emergency will be accomplished without the approval of this headquarters. Treatment of elective medical or surgical conditions is not authorized, and laboratory procedures considered nonessential to the diagnosis and treatment are not compensable.

"Private rooms and special nurses will not be provided without authorization from this headquarters.

"On completion of treatment, an *itemized* statement will be mailed to this headquarters covering all services rendered."

Very truly yours,
Don G. Hilldrup
Colonel, M. C. Surgeon

CHICAGO UROLOGICAL SOCIETY HAS ELECTION

At the annual meeting of the Chicago Urological Society held May 24, 1945, the following officers were elected: — President — Dr. Frederick W. Schacht; Vice-President — Dr. Harry J. Dooley; Secretary-Treasurer — Dr. James W. Merricks.

MEDICO-LEGAL CONFERENCE AND SEMINAR OCTOBER 1-6, 1945

The Department of Legal Medicine of the medical schools of Harvard, Tufts, and Boston University in association with the Massachusetts Medico-Legal Society will present a six-day program of lectures, conferences, and demonstrations having to do with the investigation of deaths in the interests of public safety. Attendance during five of the six days of the course will be limited to fifteen persons who have registered in advance. On one day (October 3) the program will be open to any physician, lawyer, police official, or senior medical student who may care to attend.

Further information may be obtained from the secretary of the Massachusetts Medico-Legal Society, 25 Shattuck Street, Boston.

TRAINING OF PHYSICAL THERAPISTS

Dear Doctor:

I want to call your attention to the National Foundation's special program for the training of physical therapists and the development of physical therapy.

An appropriation of $1,267,600 by the National Foundation makes it possible to offer scholarships to young men and women who have been graduated from accredited schools of nursing or physical education, or who have completed a minimum of two years of college work with emphasis on biology and other basic sciences. Candidates with the proper prerequisites will be trained at physical therapy schools approved by the Council on Medical Education and Hospitals of the American Medical Association.

This program was developed with the advice of a special committee composed of Dr. Irvin A. Abell, of Louisville, Ky., chairman, and Dr. Donald B. Armstrong, of New York; Dr. Max M. Peet, of Ann Arbor, Mich.; Dr. Morris Fishbein, of Chicago; Dr. Arthur L. Watkins, of Boston; Dr. M. G. Westmoreland, of Chicago; Miss Jessie Stevenson, of New York, president of the American Physiotherapy Association; Miss Lucille Daniels, acting director of the division of physical therapy, Stamford University, Calif.; Dr. Don W. Gudakunst, medical director of the National Foundation; Miss Catherine Worthingham, director of technical education for the Foundation, and myself.

The committee feels that the lack of qualified physical therapists today has hindered physicians from making a wider use of physical therapy in various medical specialties.

Students receiving these scholarships will be trained for treatment of all types of illness and disability in which physical therapy is used, so that they will be equipped to serve under the supervision of doctors in various kinds of practice. We are not asking scholarship recipients to restrict their activities to the treatment of infantile paralysis patients. Instead, a pool of skilled professional workers will be made available; they may be called in time of infantile paralysis outbreaks but they are not trained in the care of infantile paralysis alone.

We also will continue to aid approved physical therapy schools to expand their facilities so that larger numbers of students may be trained. At the same time, we hope to increase the numbers of qualified teachers available to staff these schools, by offering a number of teaching fellowships to experienced physical therapists who seem to be promising potential instructors.

The new program will help fill the urgent need for competent workers in physical therapy. Although the first scholarship students have started their studies, it will not be until the summer of 1946, at the earliest, that any increase in numbers of new physical therapists will take place. At that time we trust you and your colleagues will begin to find at least one of the major obstacles to the wider use of physical therapy partially removed.

Sincerely yours,
Basil O'Connor, President,
National Foundation for
Infantile Paralysis

NEW CLEARVIEW DIAGNOSTIC TREATMENT BUILDING

On June 10, Clearview, owned and operated by Dr. and Mrs. Albert L. Crane, formally dedicated their new diagnostic treatment building on the Kratzville Road, Evansville, Indiana. With this increase in bed capacity at their institution, Clearview is better enabled to properly give electro-shock therapy, insulin shock therapy, Malaria, alcoholic conditioned reflex treatment, etc.

Clearview has been operating since September, 1941, and the increase in patient load necessitated the enlargement of their quarters. At the dedication on June 10, C. C. Herzer, M.D., president, Vandenburgh County Medical Society, and Congressman Charles M. LaFollette appeared on the program.

CHICAGO DERMATOLOGICAL SOCIETY ANNOUNCES NEW OFFICERS

The present officers of the Chicago Dermatological Society are as follows: — President — Frederick R. Schmidt, Chicago, Illinois; Vice-President — M. J. Reuter, Milwaukee, Wisconsin; Secretary-Treasurer — Marcus R. Caro, Chicago, Illinois.

★ BUY ANOTHER BOND ★

Medicine's Role in the War Effort

GENERAL KIRK REPORTS ON MALARIA EFFECTS

Fear due to lack of information can cause more harm than malaria itself. Major General Norman T. Kirk, Surgeon General of the Army, declared in his first public report on the effects of this disease on the individual.

With the prospect of thousands of soldiers returning to this country from malarious regions, General Kirk made an appeal for a better understanding of the problem so the public will realize that, with a few simple precautions, malaria is not a disease that should give undue concern either to infected service men or to their families.

"The soldier who, through ignorance, worries about malaria and the chances of relapses," he said, "will suffer more ill consequences than the man who understands that with proper care this disease is not of serious import from the standpoint of the patient's general health. This very knowledge will contribute considerably to the individual's well-being and fitness."

General Kirk pointed out that families should not consider soldiers infected with malaria a menace to them or the community, provided the malaria sufferer is taking treatment or promptly obtains medical care when symptoms occur.

There are a number of types of malaria, but the two that concern American troops are benign tertian malaria, which is rarely a serious disease, and malignant tertian malaria, which without treatment may be fatal. The latter type is cured by atabrine so that it is not a problem when properly treated. The attacks of malaria which soldiers will suffer after return to this country will be due to benign tertian malaria. This is the one type which is of military significance to American troops.

The service man infected with benign tertian malaria can continue with his usual arduous combat duties as long as he takes the necessary small doses of atabrine. Benign malaria is rarely cured by atabrine. However, this drug suppresses the disease. When a man with benign malaria stops taking atabrine, the usual symtoms — chills, fever, headache, and nausea — may appear.

In the majority of cases the disease has run its course after a man has suffered a few relpases, and no permanent damage has been done. Out of 1,000 cases, about one third will have only one attack. There will be about 40 out of 1,000 who will suffer ten relapses, and only about one in 1,000 will have as many as 20 attacks. Relapses become less acute as time goes on.

When attacks do occur, the symptoms are rapidly relieved and all progress of the disease is quickly suppresed if the proper medical care is given the patient. In most cases this can be accomplished within 48 hours, according to General Kirk.

"As a result of prompt and efficient action," he said, "attacks of malaria by themselves cause only brief incapacitation and result in no permanent damage tc the body."

General Kirk stressed the point that malaria can be spread only by the anopheles mosquito. Even if a man is infected, the anopheles mosquito cannot transmit the disease unless it has bitten the victim during a relapse and before medical treatment has been secured. In most parts of the United States there is little likelihood of this since mosquito control measures are adequate.

Infected individuals who are not taking regular suppressive medication are particularly subject to relapses if they engage in strenuous work, or if they suffer from exposure, or if they indulge in drinking to excess.

One phase of malaria treatment that causes concern to many victims is the yellow color the skin takes on as a result of using atabrine. This color is not due to jaundice or any other malfunctioning of the body. It is caused directly by the yellow color of atabrine which is deposited in the skin. The yellowness will disappear a few weeks after the use of the drug is discontinued.

Deaths due to malaria since the beginning of the war have been rare. They are nearly always associated with other diseases and with circumstances which cause delayed or inadequate treatment, Army records

show. In the early stages of the Pacific war, malaria did more damage to American soldiers than Jap bullets — in disabling troops, but not in killing them.

★ ★

SURGEON GENERAL OUTLINES PERSONNEL RELEASE POLICY

Substantial releases of Army Medical Department personnel will not take place before the latter part of this year, Surg. Gen. Norman T. Kirk said in announcing a policy on discharges in conformity with War Department procedures. This is due to the fact that the peak of the Medical Department's activities will not be reached until fall.

In formulating the policy, consideration was given to civilian needs for professional medical, dental and veterinary care without weakening military needs. Other factors considered were the length of time necessary for personnel to complete their work in the Mediterranean and European theaters and return to the United States; replacement of Medical Department personnel in active theaters by those who have not had overseas duty; necessity for the maintenance of a high standard of medical care; the heavy load of patients in the United States; evacuation of the sick and wounded from Europe in the next ninety days, and continuing medical service in the Pacific.

The policy applies with equal effect to Army medical officers assigned to the Veterans Administration and other agencies.

It reads:

Medical Corps

(*a*) Officers whose services are essential to military necessity will not be separated from the service.

(*b*) Officers above 50 years of age whose specialist qualifications are not needed within the Army will receive a high preferential priority for release from active duty.

(*c*) Adjusted service ratings will be utilized as a definite guide to determining those who are to be separated.

Medical Administrative Corps

(*a*) Officers whose services are essential to military necessity will not be separated.

(*b*) Officers who express a desire to stay on duty shall be allowed to do so if vacancies exist. In the event there are more wishing to stay than there are vacancies, those with the highest efficiency index will be retained.

(*c*) Those who wish to be released will be selected on the basis of adjusted service scores.

Dental Corps

(*a*) Officers whose services are essential to military necessity will not be separated from the service.

(*b*) Officers above 50 years of age whose specialist qualifications are not needed within the Army will receive high preferential priority for release from active duty.

(*c*) Adjusted service ratings will be utilized as a definite guide in determining those who are to be separated.

Army Nurse Corps

(*a*) All nurses whose husbands have been released from active duty will be discharged on request when release of husband is proved.

(*b*) No officer will be separated whose services are essential.

(*c*) Officers with children under 18 years of age who wish to be released will receive a high preferential priority for selection.

(*d*) Adjusted service scores will govern other cases.

Medical Department Dietitians and Physical Therapists

(*a*) All Medical Department dietitians and Medical Department physical therapists whose husbands have been released from active duty will be discharged on request when release of husband is proved.

(*b*) Military necessity will govern all others. Since there is a shortage of these officers, it is not contemplated that others will be released from the service except in *a*.

Veterinary Corps

(*a*) Since there are insufficient officers to meet the present requirements, it is not contemplated that any officers will be released from the service.

Sanitary Corps

(*a*) Officers whose services are needed will not be separated.

(*b*) Officers who express a desire to stay on duty shall be allowed to do so if vacancies exist. In the event there are more wishing to stay than there are vacancies, those with the highest efficiency index will be retained.

(*c*) Those who wish to be released will be selected on the basis of adjusted service scores.

★ ★

POSSIBLE RELEASE OF DOCTORS AND DENTISTS FROM ARMED FORCES

Major Gen. George F. Lull, Deputy Army Surgeon General, has estimated here that 2,000 to 3,000 doctors and several hundred to 1,000 dentists should be available for discharge from the Army by the end of this year. General Lull said the peak load on the Army Medical Corps will be reached in the fall. He explained that the wounded must still be transported home from Europe and soldiers scheduled for redeployment or discharge must be given physical examinations. He expects that most of the doctors and dentists released will return to civilian practice. The Veterans Administration has sought medical men, but its most urgent requirements were met by assignment of about 300 medical officers to the agency, he said. Most of these were assigned last year on active status, and 112 had previously served with the Veterans Administration. However, no Army doctors are now being assigned to the Veterans Administration unless they desire it. General Lull said that "as the size of the Army is reduced under the partial demobilization plan, it will be possible to release certain numbers of doctors and dentists. However, the shrinkage in the

number of medical officers will not be in proportion to the reduction of the Army as a whole, since the Army will still have many wounded in hospitals. Moreover, we never filled our quota of 48,000 doctors, as only about 45,000 were obtained. Dental officers number about 15,000. We probably can release 2,000 to 3,000 medical officers and a proportionate number of dental officers by the end of the year."

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GENERAL BRADLEY TO TAKE VETERANS ADMINISTRATION POST AUGUST 11

Although he conferred with members of the House Veterans Committee on proposed veterans' legislation and has already started a study on how to correct shortcomings in the administration of veterans' hospitals, General Bradley has returned to Europe to serve in the absence of General Eisenhower. He will take over as Veterans Administration chief about August 11. Meanwhile Committee Chairman Rankin has reported that hearings on proposed legislation to reorganize the medical staff of the Veterans Administration will be postponed until General Bradley returns. "We will continue with the investigation to have a full record for General Bradley and the committee," he said. "It will serve as a basis for corrective legislation." Before adjournment the committee heard Col. Louis Verdel, manager of the veterans' hospital at Northport, N. Y., where it was alleged that the Army had assigned physically and mentally unfit soldiers to attend mental patients, deny that Northport was the worst hospital in the service. He claimed that two of five army doctors attached to the institution were on prolonged sick leave, one of them diagnosed as neurotic by army examiners. "Maybe we'd better investigate the War Department," said Mr. Rankin. "I bitterly resent the War Department's attitude toward these veterans' hospitals."

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NEW BRANCHES CREATED IN PROFESSIONAL DIVISION

Vice Admiral Ross T. McIntire, Surgeon General of the Navy, recently approved a reorganization of the Medicine and Surgery Branch of the Professional Division creating two branches of the specialties, namely a Medicine Branch and a Surgery Branch. Capt. F. R. Hook (MC), U.S.N., will head the Surgery Branch, and Comdr. J. R. Miller (MC), U.S.N.R., will head the Medicine Branch. The latter branch is composed of a General Medicine Section and a Tropical Medicine Section.

Functions of the Professional Division are defined as follows:

"The Professional Division shall (*a*) consult with medical activities ashore and afloat in order to determine the professional needs and problems arising in the field; (*b*) study, evaluate, advise and make recommendations on the professional needs, policies, standards, practices and performances of the Medical Department, particularly as these relate to medicine, surgery, neuropsychiatry, rehabilitation and hospitalization, and (*c*) maintain liaison with such other military and civilian agencies as may be required in the prosecution of the functions of this division. The term 'professional' as used is interpreted to include all phases of clinical practice as well as the technical services and facilities required to make such practice effective."

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PENICILLIN SHORTENS CONVALESCENT PERIOD

According to a recent release from the U. S. Army General Hospital at Camp Pickett, Va., penicillin shortens by three to six months the average convalescence of American soldiers with limbs shattered by shrapnel or bullets in World War II. Lieut. Col. J. S. Norman, chief of the orthopedic service at Camp Pickett, stated that several million units of penicillin is administered during every twenty-four hour cycle to from 300 to 500 soldier patients. In many cases the penicillin treatment had begun immediately after a soldier was carried from the battlefield. From then on, at base hospitals overseas and on through treatment of the soldiers at army general hospitals in the United States, expert administering of penicillin continues. Almost without exception, infection is vanquished. Thus, surgery to mend shattered bones is rendered much easier and final healing itself is expedited.

Colonel Norman also stressed the improvement of other technics concerning treatment of smashed bones. In addition to the steady advance of hospital science as a whole picture, he pointed out that rapid development of traction devices and scientifically designed orthopedic braces play indispensable roles in the knitting back to normal of our fighting men's shattered limbs.

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ARMY ENROLLS FULL QUOTA OF OCCUPATIONAL THERAPISTS

Mrs. W. C. Kahmann, chief of the Occupational Therapy Branch of the Army Medical Department, recently announced that occupational therapists' emergency training courses will be terminated as soon as those courses scheduled for June and July have been completed. The courses were initiated last July to overcome a serious shortage of occupational therapists in army hospitals. The full quota of students has now been enrolled, and no further application will be considered. Under this emergency training program 700 college women were enrolled and on completion of their schooling will assist in the reconditioning of army sick and wounded soldiers.

★ ★

EXTENSION OF POLICY ON PROVIDING PROSTHETIC APPLIANCES

Veterans Administrator Hines has announced in a letter to all agency stations that the policy has been extended on provision of supplementary or emergency limbs to include braces and other types of prosthetic appliances. How many veterans will be affected cannot be estimated. The Army alone has reported 8,470 leg amputations and 2,530 arm amputations. The Navy has not issued comparative figures. The number of veterans who will require other types of prostheses or artificial limbs is said to be entirely "problematic."

WHOLE MILK FOR PATIENTS ON HOSPITAL SHIPS

The War Department recently announced that a new method of quick-freezing whole milk is now making it possible to serve this beverage to wounded soldiers returning from overseas on Army hospital ships. This welcome and important addition to the diets on the hospital ships resulted from a series of researches carried out by the Veterinary Division of the Office of the Surgeon General.

Although the milk in some instances has been kept in the frozen state for three months, its taste is as fresh as if it had just come from the cow and the bacterial count is lower than that in the average milk supply of the average American home.

Approximately 30,000 pints of frozen whole milk is now being shipped monthly from Charleston and Boston, and additional large amounts from New York, New Orleans, San Francisco and Seattle.

While the milk is intended for the hospital ships, some of it, when the situation makes it possible, will be sent to overseas hospitals as well. Later it is expected to enlarge shipments for the hospitals. In addition, 400,000 pints is being shipped monthly to Alaska for the general use of American troops stationed there.

★ ★

GERMANY'S TECHNIC IN SURGERY LAGGING

Germany, once the world's acknowledged leader in surgery and medicine, is twenty years behind American methods in the handling and healing of war wounded, according to Col. Edward D. Churchill, Allied Mediterranean forces' surgical consultant, who recently inspected the wounded in former German hospitals. A German army colonel indicated that he regarded the outcome of wounds in this war to be identical with conditions he observed in the first world war. American recoveries, on the other hand, improved phenomenally, such as field operating tents up at divisional clearing stations, the highly developed use of blood transfusions and the high standard of antisepsis in the field.

In the six German hospital areas inspected by Colonel Churchill he found that of forty serious chest wounds picked at random thirty-seven showed infection, while the American patient's average was well below 10 per cent. For blood transfusions the Germans used an antiquated syringe type apparatus discarded years ago by the Americans. The Germans had not realized the possibilities of transfusion and would not believe, until the Americans gave a demonstration, that one man could successfully receive more than 600 cc.

The fundamental difference found between the American and the German system is that the Americans have a systematic, continuous routine from the moment of wounding until the highest possible degree of restoration to health. Infected chest wounds, which after the first world war left hundreds permanently hospitalized with great gaping wounds, can now be handled so that within a few weeks the men are completely restored with normal respiratory systems. The Germans' methods, on the other hand, were characterized by a lack of direction or any general and definite policy in professional methods. Colonel Churchill stated that individual surgeons carried on "just about as they pleased" and field surgeons were inclined to pass over extremely serious cases with the idea that the injured men would die anyway.

★ ★

LOCAL APPLICATION OF CRYSTALLINE SULFONAMIDES DISCONTINUED

The War Department Technical Bulletin of Medicine (TB MED 147), March 1945 (distributed to general and field hospitals and other medical units), announced the general policies regarding the local use of chemotherapeutic agents. Experience in wound management justifies the abondonment of local use of any chemical agent in a wound for its supposed antiseptic effect in the prevention or treatment of infection. The practice of routine local application of crystalline sulfonamides to wounds as an emergency aid measure and prior to initial wound surgery will be discontinued. The local application of these compounds to wounds not involving serious cavities following wound surgery will also be discontinued, and their local use in wounds involving seripus cavities is not recommended.

★ ★

FIGHT DISEASE IN GERMANY

American personnel, displaced persons and German prisoners of war are being safeguarded against communicable diseases and tuberculosis under a sanitation program directed by 5th Infantry Division medical officers in that part of the Ruhr controlled by the 5th.

Lieut. Col. Enos G. Walker, Detroit, division surgeon, and Lieut. Col. Howard H. Base, commanding officer of the 5th Medical Battalion, are directing the sanitation program for Allied personnel, the division's three displaced persons camps and seven Allied prisoner of war camps. By installation of an adequate diet and sufficient sanitation and medical facilities, the 5th Division team has cut the death rate 65 per cent a day in one prison camp.

About 75 persons are evacuated each day in the Hemer prison camp, Colonel Walker said. Of this number about 65 prisoners are suffering from dysentery and 6 from typhus. Small hospitals are being established in the vicinity of prison camps.

Guarding against the spread of typhus the division medical group is delousing thousands of displaced persons daily through use of DDT powder. Allied medical personnel are being assisted in prisoner of war camps by German medical units which have set up their own dispensary facilities, using American supplies and working under 5th Division supervision.

Buildings in the 5th's area of control are being sprayed with DDT powder to destroy breeding places of the typhus carrying louse. In addition to other precautions, men of the division are being educated to take precautions against being bitten by the lice because typhus inoculations are not 100 per cent preventive against the disease.

Original Articles

CARCINOMA OF THE LARYNX: Present Concepts of Diagnosis and Treatment

PAUL H. HOLINGER, M.D.
CHICAGO

Cancer of the larynx is one of the most curable of all cancers. Unlike many other cancers, its onset is not silent but becomes apparent at once to the patient, his family and his physician. A change in voice or a persistent, progressive hoarseness is the danger signal. Fortunately, this symptom presents itself early, at a time during which the lesion may easily be removed. Unfortunately, early, it is painless and usually causes the patient little inconvenience; therefore, the patient postpones seeking a diagnosis until the more serious later symptoms of pain, dyspnea and dysphagia appear. Because of these factors, it would seem that an educational program such as that which has made the public aware of the importance of a small mass in the breast could now be directed toward a realization of the significance of hoarseness. As Clerf[1] has stated, "In this day, when there is so much time, energy, and money being spent to discover the cause of cancer, it behooves every one of us at least to detect its presence, especially where it can be so effectively treated."

Diagnosis. — The final diagnosis of carcinoma of the larynx can only be made from the microscopic examination of tissue taken from the lesion itself. The gross examination is never absolutely diagnostic. Papillomata, leukoplakia, and, in some instances, the fungus infections or tuberculosis of the larynx may so closely simulate the gross appearance of laryngeal carcinoma that only the gravest tragedies can follow initiation of surgical or irradiation therapy without histologic confirmation of the diagnosis. In spite of this well known fact, instances of such management are still too frequently seen. Aside from the gross mismanagement of the patient, such cases introduce serious errors in statistics which attempt to evaluate the effect of various therapeutic procedures.

The diagnosis of laryngeal carcinoma begins with the history, which is usually that of hoarseness of several weeks' to several months' duration, with pain, dysphagia and dyspnea as later symptoms. Persistent, progressive hoarseness in adults must be considered due to carcinoma until careful studies have confirmed or denied this diagnosis. The mirror examination of the larynx, always a preliminary one, gives the first positive clue. But often the gagging patient prevents a satisfactory examination from being made, or an overhanging epiglottis hides the area of vocal cords in which early carcinomas are most frequently found. This examination is facilitated in the gagging patient by spraying the pharynx with 2% pontocaine or 5% cocaine to eliminate the gag reflex. With this anesthetic the overhanging epiglottis may be retracted by a curved applicator, and the entire larynx inspected at leisure, noting the position and extent of the lesion, as well as the motility of the vocal cords.

The roentgen examination of the larynx is the second step in the diagnosis of carcinoma of the larynx. This includes the usual lateral x-ray

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of the neck for soft tissue outlines and an antero-posterior film to outline the trachea. The antero-posterior laryngeal examination made by placing a film in the esophagus aids greatly in outlining the subglottic extent of a lesion. Finally the planogram, in focus at various levels from front to back, often gives additional information regarding the invasion of the tumor into the deep structures of the larynx.

The removal of tissue for biopsy is the most important of the diagnostic procedures. This may be done indirectly, but the direct examination with the laryngoscope permits more satisfactory search of the laryngeal ventricles and a more complete examination subglottically. The careful study which the direct laryngoscopic examination affords makes more certain the removal of representative tissue for biopsy and aids in designating therapy. Too much stress cannot be placed upon the establishment of the diagnosis accurately by biopsy. This is re-emphasized here because cases still come under observation that have had therapy for a supposed carcinoma but have never had a biopsy. Subsequent examination demonstrated two such cases to have laryngeal papillomas and two others to have laryngeal tuberculosis. It is especially regrettable that these patients had received their therapy in an institution that reports its cases as biopsy-proved.

Histologic gradation of a tumor of the larynx as *a* criterion for the selection of therapy is stressed by some and condemned by others. While different grades of tumor activity may be found in the same tumor at different sites, one rarely finds a grade I and a grade IV type in the same lesion. Consequently, the gradation of malignancy plays a part in determining the therapeutic procedure to be chosen in certain borderline cases.

Thus, in the diagnosis of a carcinoma of the larynx one must determine its location and extent grossly, the degree of motility of the vocal cord, and finally the histopathology of the lesion.

Treatment. — The therapy of laryngeal cancer has undergone frequent changes and has passed through many cycles. Evaluation of a therapeutic procedure should, it would appear, be judged on the basis of a *permanent* cure of the disease rather than on the basis of a five-year cure or even, as has recently been done, on the basis of a three-year cure. It is a well known fact that carcinomas of the larynx surviving the first year or year and a half after treatment recur most frequently in the fourth and seventh years. Therefore, a true analysis of the effectiveness of treatment cannot be made with patients who have not passed these critical years.

Surgical procedures in laryngeal carcinoma may be divided into three groups: direct endoscopic procedures, laryngofissures, laryngectomies. Direct endoscopic procedures, the most conservative, are suggested in only a very limited group. Jackson and Jackson[2] mention this procedure as a wide resection of a small lesion with punch forceps. Le Jeune[3] and Figi[4] have suggested a similar procedure with cautery dissection under suspension laryngoscopy.

Without question, the laryngofissure operation has given the highest incidence of permanent cures of carcinoma of the larynx of any therapeutic procedure. This conservative surgical resection of one vocal cord is indicated when the lesion is localized to the middle third of the cord and has produced no impairment of motility. If the lesion occupies the anterior commissure, the anterior third of both vocal cords can be removed by the laryngofissure technic. Thus, the carcinoma is removed, the original airway preserved, and the patient is provided with a serviceable voice. Series of cases showing an 86% cure of these early, localized cases by the laryngofissure technic have been reported.[5] Our own small series of 20 cases cannot be fully presented at this time since we feel that sufficient time has not elapsed to give proper significance to these cases. However, only one of the 20 cases has developed a recurrence. One of these cases was operated more than five years ago and ten more than three years ago. The recurrence in the one patient mentioned developed within 6 months of the original operation. Considering this a curability rate of 95% is not justifiable until sufficient time has elapsed to be positive all cases are stable.

In the more advanced lesions, if the carcinoma is still within the confines of the glottis or shows only moderate subglottic extension, it is evident that surgical removal of the larynx, total laryngectomy, gives the highest incidence of cure. This incidence, 50% to 60%, is below the rate of cure for either surgical or irradiation

therapy of the earlier lesions described above. Again reporting only preliminarily our own cases, of 19 laryngectomies 12 are living and well, free of recurrence, and one died at 76 years of age 7 years after surgery, of cardiac decompensation but free of carcinoma. Five patients have developed recurrences. The 19th patient, one of the earliest in the series, died 3 weeks following surgery. It is emphasized again that this group has not been under observation a sufficiently long period of time to regard the statistics as any more than a preliminary report.

More extensive extrinsic carcinomas[6] of the larynx are generally considered inoperable and the results following surgery are unsatisfactory in most instances. However, the brilliant results achieved with this group by Orton[7] point the way for increasing the indications for radical surgical procedures.

In a discussion of present concepts of treatment of carcinoma of the larynx, advances in surgical technic may be presented in some detail. Preoperatively, both before laryngo-fissure and laryngectomy, careful attention to dental hygiene is of utmost importance. Postponement of surgery for a week to ten days to permit necessary dental work to be done results in a marked improvement in post-operative time and a reduction of post-operative infections. The administration of sulfa drugs, beginning two days prior to surgery, likewise aids in reducing post-operative infections to a minimum.

The advent of intratracheal anesthesia has aided materially in reducing the hazards of operation in our series of laryngectomies. We have, for a number of years, employed the technic recently described by Browne,[8] using an intra-tracheal tube passed into the trachea through the nose or mouth during the skeletonization of the larynx.[9] This is replaced by an "anode" tube placed into the trachea by the surgeon after the larynx is severed from the trachea. An inflated cuff attached to this tube prevents the aspiration of blood from the wound, and likewise keeps the field free of tracheal secretions since these are aspirated by the anesthetist with a small catheter inserted occasionally through the anode tube itself.

A major contribution in the surgical technic of the laryngectomy operation has recently been suggested by Vasconcelos and Barretto[10] of Sao Paulo, Brazil. This consists of the adoption of a surgical principle long used in gastric surgery to the removal of the larynx. Following skeletonization of the larynx a specially constructed curved clamp is passed under the larynx at its attachment to the pharyngeal mucosa. The larynx is then removed by severing it from the upper surface of the clamp and the pharyngeal mucosa is sutured without opening the pharynx. The employment of this technic results in a primary closure of the wound without a fistula. The feeding tube may be removed on the third to the fifth day, and the patient is able to leave the hospital on the eighth day following the laryngectomy.

Advances in the technic of irradiation have increased the usefulness of this therapeutic procedure. In early cases of intrinsic carcinoma, however, there is as yet no recorded evidence that this type of therapy can approach the rate of curability obtained surgically in a similar group of cases over a reasonable period of time. However, irradiation is indicated in cases in which surgery is contraindicated by the age, physical condition or the temperament of the patient. In the extrinsic or inoperable lesions increasingly good palliative results as well as an increasing incidence of five-year cures may be expected with improvement in technic. A third type of carcinoma of the larynx for which irradiation is indicated as a choice of therapy is the tumor that grossly has extended to the borders considered as the limitations for surgery, yet histologically is demonstrated to be a grade III or grade IV tumor. Such lesions respond exceedingly well to irradiation, but their rate of recurrence is relatively high.

Always of importance in the evaluation of therapy is the preservation of function. This must be entirely secondary, however, and never advanced as a primary consideration. Preservation of voice for a year or two at a sacrifice of life at the end of that time cannot be justified. The voice after irradiation is admittedly best of all, provided the tumor was not too large and the lesion was relatively radio-sensitive. The voice after laryngofissure is usually good, and in some instances returns to an essentially normal character. The development of bucco-esophageal speech following laryngectomy, or the use of an artificial larynx, permits the patient who has

had this type of surgery to converse satisfactorily. Improvements in teaching the technic of bucco-esophageal speech will make it supplant the use of the artificial larynx.

CONCLUSIONS AND SUMMARY

1. Cancer of the larynx is one of the most curable of all cancers. The diagnosis can be made and appropriate curative treatment can be instituted early because the initial symptom, hoarseness, is an early one.
2. The diagnosis can only be made by biopsy. The history, mirror examination, roentgen delineation and direct visualization aid in establishing the extent of the lesion.
3. The histology and site of the lesion and the general condition of the patient determine treatment. The ultimate prognosis is best in well differentiated lesions.
4. Laryngofissure with cord resection of well localized lesions in the middle third of the cord or in the anterior commissure or the rare endoscopic resection of extremely small lesions will result in curing 85% of patients with this type of lesion.
5. A laryngectomy is indicated in cases of intrinsic lesions in which the tumor extends to the arytenoid and impairs its motility, or extends slightly subglottically. Laryngectomies will result in curing 50% to 60% of these cases.
6. Irradiation of early, intrinsic lesions limited to the vocal cord without impairment of motility has not shown the ability to give results equal to surgery in similar lesions. However, irradiation is indicated in these cases if the age or physical condition of the patient contraindicates surgery.
7. Irradiation of the more advanced intrinsic lesions and the extrinsic lesions is showing a steady improvement in the results of therapy. In borderline cases the grading of the tumor is significant in determining therapy.
8. In the management of laryngeal carcinoma the cure of the cancer is of primary importance. The return of function is secondary and should not be a determining factor in the choice of therapy. The voice after laryngofissure is usually good; the bucco-esophageal voice or the artificial larynx is serviceable and places little limitation on the patient's activity.

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DISCUSSION

Dr. Thomas C. Galloway, Evanston: I can disagree with nothing Dr. Holinger said. I think that most men who are interested in this particular field have pretty well standardized their ideas and have come to rather definite agreement along the lines the speaker outlined. It is unfortunate this presentation was given before this audience rather than before a group of men in general practice, because there are certain approaches to treatment of carcinomas of the larynx which they should know.

Our head cancer team at Cook County Hospital consisting of clinician, pathologist and radio therapist has seen great advances in the treatment of cancer in the last twenty years. In some types, as for instance in carcinoma of the pharynx and the tonsil, I have swung very sharply from surgery and believe that in these particular instances the preferable treatment is irradiation. But when we come to discussion of carcinoma of the larynx, both surgery and irradiation must be considered, as Dr. Holinger has so carefully outlined, on the basis of type and location.

We have heard a great deal lately about the value of irradiation in the larynx. I have been skeptical of some reports because later we have had to take some of these patients favorably reported on and furnish them free beds at the County Hospital until they die. I have seen three patients die—one from irradiation necrosis and two from recurrence—within six months of the time they had been demonstrated as cured. It is generally held that five year cure is a proper criterion. One of the best reports is that of Coutard showing 28 per cent cures of 5 year freedom from recurrence, and Coutard subsequently issued a very honest report showing that one-third of the 28 per cent died of recurrence in the sixth or seventh year.

When we see reports of three year cures on which we are to compare treatment as opposed to the very satisfactory treatment by surgery, especially in that

type of intrinsic carcinoma of the cords which will recover in 85 per cent of cases with a normal airway and useable voice, I think there is a marked injustice done to the patient. He is given the hope that without suffering any loss of time, or undergoing any danger, he can have simply irradiation and be cured, which is far from the truth.

It is true that if a man has a new method which he thinks is going to revolutionize treatment he may present it even only after three years of use so that others may try it. But we should hold ourselves to fair criteria and get it to the people who see such cases first that statistics must be fair and based on biopsies, and sufficient time must have elapsed so that we can be sure the results are going to be permanent before they are published as definitive results.

Dr. Danley P. Slaughter, Chicago: I should like to congratulate Dr. Holinger on this paper. I think it presents a very clear concept of the problem.

I think one of the main problems in the cure of larynx cancer is the extension of the use of laryngofissure. Too often some of us try to make these operations do what they were not intended to do and that is why they have fallen into some disrepute. If the indications are definitely adhered to, the operation of laryngofissure is alright, but in the attempt to save the voice we are likely to stretch the indications. The problem of metastatic cervical nodes from larynx cancer should be entirely a surgical one in those cases in whom serious attempt to cure is done. Most recurrences following laryngectomy occur in the neck nodes, which actually is one reason for laryngectomy. Following such an operation there is no larynx for the cancer to recur in. When squamous carcinoma does occur in neck nodes the treatment should be radical neck dissection if the nodes are operable. Such tumors are by no means as curable by radiation methods as by complete surgical excision. By radical neck dissection I do not mean a removable of one or two nodes but rather a formal operation designed to remove all the lymphatic tissue in the neck including the internal jungular vein and the sternomastoid muscle. It is impossible to do a complete neck dissection without removing these last two structures.

Dr. Holinger has had recently two cases from his series who have had neck node recurrences. I have had the privilege of doing radical operation on both. Although both are recent cases they are both doing well at the moment and are certainly in far better condition than they would be from treatment by radical radiation. The presence of one or two metastatic nodes, if still operable, is no contrary indication to laryngectomy if the primary lesion is still operable. In such cases both operations should be either at the same time or postponing the neck dissection for an interval of three to four weeks. In border-line cases it is possible to use radon seeds to keep the nodes under control temporarily until operation can be done.

Dr. G. H. Scott, Chicago: I would like to ask one question. In the matter of postoperative irradiation, do you believe that a cancer which you consider operable should be irradiated after the cancer has been removed to your satisfaction? Or do you think it is better to wait until you see signs of recurrence before considering irradiation?

Dr. Paul H. Holinger, Chicago (closing): In answer to the last question, I believe that so-called prophylactic irradiation following surgery for cancer of the larynx should not be administered unless it was found during the surgical procedure that the lesion could not be completely removed. In other words, we would prefer not to give any irradiation after surgery unless positive evidence of a recurrence was found. Thus, one would hold the fire until it was needed.

I wish to thank both Dr. Galloway and Dr. Slaughter for their discussions. Both were very important and added immeasurably to the paper. As Dr. Galloway stated, while presentation of a paper on cancer of the larynx before this group is important, this subject should be discussed before a general session. Division of a state meeting such as this into sections has its disadvantages. The purpose of a paper such as this is to stress the significance of a symptom, hoarseness, for which the patient first seeks aid from his family doctor. Hoarseness should be popularized as a symptom of significance suggesting systemic disease in the same manner that a cough has been looked upon as a symptom requiring an extensive search for its cause.

I am glad that Dr. Galloway emphasized two additional points: First, the question of "three year cure" which in cancer of the larynx is no real cure, and, second, the question of the need for honesty in reporting statistics. To report a case of cancer of the larynx as a cure only to have the patient die of his cancer a few months later or to report a case of cancer of the larynx supposedly cured which in truth on biopsy had been a papilloma introduces errors in evaluating therapeutic measures that will take years to correct.

INCIDENCE OF PERFORATED ULCER LOW

The total incidence of perforated ulcer, the most serious complication in this stomach condition, is substantially small, it is reported in *The Journal of the American Medical Association* for June 9. Only about 8 per cent or less of the ulcers, according to figures cited, perforate or penetrate the tissues. The figures cannot be considered definite, however, since the number is dependent on two variable factors, the activity of the ulcer and the period of time under consideration. The possibility of perforation can be reduced to a minimum by adequate treatment of the ulcer until healed, by continuation of an ulcer diet to prevent recurrence and by examination at regular intervals.

TREATMENT OF SUBACUTE BACTERIAL ENDOCARDITIS, RECOVERY WITH PENICILLIN

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The outlook for patients with bacterial endocarditis is unfavorable. Its treatment can be divided into two eras: that preceding and that subsequent to sulfanilamide and penicillin.

Prior to sulfanilamide reports of cures were rare. Even those of competent clinicians were regarded skeptically. Many authorities looked upon such reports as instances of rheumatic endocarditis, a type characterized by its tendency to heal or at least by a disposition to remit. The distinction between acute and subacute or between rheumatic and subacute or bacterial endocarditis may not be obvious. Clinically the much greater likelihood of emboli and the isolation of streptococci from the blood have been taken as the most important marks of subacute bacterial endocarditis as differentiating it from the rheumatic type. Arthritis common to rheumatic fever is not a part of subacute bacterial endocarditis. Active rheumatic fever endocarditis and subacute bacterial endocarditis may coexist. 10-20% of patients with rheumatic heart disease terminate with subacute bacterial endocarditis.[1] Without adequate bacteriologic facilities it has not been possible to properly identify a given instance of non-embolic endocarditis. On the other hand it has been thought that very painstaking bacteriology yields bacteria even in rheumatic endocarditis.[2]

The outcome of the disease has itself been taken as a diagnostic criterion. If an endocarditis patient recovers, his recovery has been taken to indicate that his endocarditis was rheumatic. Libman assumes that all "recoveries" antedating sulfanilamide and artificial fever were spontaneous remissions and numbered about 3 cases in each 100. Among these are the oft-quoted patients treated by Capps with intravenously injected cacodylate.[3]

Of the 7 cases recently reported by Kelson and Paul White[4] as treated by sulfapyridin and heparin, 3 were made symptom-free. Of these successes only one showed emboli. 3 of the failures had emboli. While emboli may not mark subacute bacterial endocarditis from rheumatic endocarditis they certainly distinguish the process as being more serious.

This overlapping of findings and difficulty in the clinical distinction of rheumatic from bacterial endocarditis carries over into the pathology. Competent, unprejudiced pathologists as Clawson[5] have used the greater frequency of emboli, bacteria in the blood stream, the softer type of vegetation and the less common incidence of Aschoff bodies in bacterial endocarditis as the findings marking it from rheumatic fever.

The reported finding of active inflammation in the hearts of patients dead of cardiac failure many years after their acute carditis emphasizes the need for conservatism in speaking of cure rather than remission in discussing infections of the heart.

Eggleston thinks that all cures for as short as six months time must be rejected as remissions.[6] After the advent of bacteriology vaccines were employed in the treatment of endocarditis.[7, 8] As recently as 1934 cures have been reported by this method.[9] Indeed, vaccines have been advocated to reinforce the sulfa drugs.[10] Arsenic as cacodylate or arsphenamine was the earliest form of chemotherapy. Mercury, in the form of merthiolate, followed. The results remained unimpressive. Although there were earlier reports of successful sulfa treatment of acute bacterial endocarditis cures of subacute endocarditis, the lenta form, appear after 1937. All of the forms of sulfa have been employed. The only effect was a lower temperature which resumed its former height on stopping the sulfa. An average blood level of 12 g. was maintained. To the sulfa therapy was added heparin,[12] now discontinued, and fever produced electrically or by intravenous nonspecific vaccines. With some reports optimistic[4, 13] failures predominated and most investigators had no success even with continued, heavy doses in many cases.[12, 14]

The discovery of penicillin naturally led to its use in endocarditis; this in spite of its demonstrated ineffectiveness against most strains of streptococcus viridans in vitro and in experimental infections of animals and also in spite of the discouraging report of Keefer's committee governing the early distribution of penicillin. In my experience the nonhemolytic streptococcus found in the blood of patients with subacute bac-

terial endocarditis is usually classifiable as streptococcus fecalis (enterococcus).

Poindexter claims that streptococcus salivarius is the strain of streptococcus most commonly found in endocarditis lenta.[15] According to him streptococci of the salivarius group are more susceptible to penicillin than are the enterococci or bovine strains.

Two of my patients were treated with vaccine, one with vaccine and sulfa and one with penicillin following unsuccessful sulfa therapy.

CASE HISTORIES

Case 1. Female, 25 years old in 1934 complained of recurrent sore throats, a knowledge of "heart disease", a shortness of breath and sore joints. Had had repeated sore throats since childhood culminating one year before examination in a "streptococcus infection" with high fever and sore, swollen joints lasting several weeks. "Heart murmurs" were found several years ago. She had been short of breath for one year. Her joints were painful and tender when first seen.

The essential findings were anemia, petechiae about elbows and wrists, tachycardia, low fever, enlargement of the heart to the right, variable presystolic murmur and a palpable spleen. Cultures of her blood according to Clawson's method yielded indifferent streptococci becoming green on repeated subculture. After 25 injections of a vaccine made from greening streptococci isolated from her throat she was fever-free. Pain left her joints. Her blood was sterile. The spleen could not be felt. The heart was unchanged. After 7 years these findings remained as on last examination. There had been no recurrence of joint pain. This patient may have had streptococcemia complicating rheumatic fever and rheumatic endocarditis.

Case 2. A nurse, 27 years old, complained of fever, cardiac irregularity and precordial pain. She had had frequent severe attacks of tonsillitis until a tonsillectomy 17 years ago. She had scarlet fever 11 years ago and acute iritis 6 years ago. 3 years before the present illness she had had sore throat followed by substernal pain, transiently swollen painful joints and fever for several weeks. A streptococcus vaccine had been given at that time.

Her present symptoms had started 7 months before examination with fever of 99.0-100.0. Her heart "flip-flopped." Petechiae were noted, the heart was found enlarged. There were variable cardiac murmurs. The spleen was enlarged. Her feet swelled during the day and a diagnosis of acute endocarditis was made. She had then been sent to bed for 6 weeks. 6 teeth had been extracted 3 months ago.

In spite of the extreme exhaustion and afternoon fever she refused to stop work. Night duty in an institution permitted her some rest. She was cyanotic. Her temperature was 99.6 degrees. Her heart was enlarged transversely. There was a presystolic and a systolic apical murmur. The first tone at the apex was accentuated. The pulmonic second tone was accentuated and duplicated. The liver was 2 fingers below the costal margin and tender. The spleen could be felt. I saw no petechiae. Her hemoglobin was 75%, erythrocytes 5,000,000 and the leucocytes 8,700. She said that at no time in the 7 months had the leucocytes been increased. Indifferent streptococci were isolated by me from her blood on two occasions. These were identified as enterococci. She was under observation for 10 weeks taking hydrochloric acid for achlorhydria. Her condition remained unchanged. Fever persisted. 34 subcutaneous injections of a stock vaccine containing greening, hemolytic and indifferent streptococci of blood origin were given over 14 weeks. These doses ranged from 20,000 to 1,000,000,000 bacteria, general reactions being avoided. Two cultures of her blood yielded no growth. The liver and spleen could no longer be felt. Five years later she remained well. Her heart findings were unchanged.

Case 3. A nurse, 33 years old, had been tired and chilly for 6 months. She had had scarlet fever and recurrences of hemolytic streptococcus sore throat. 12 years ago she had arthritis with swelling, pain and fever for 6 months. A mitral stenotic lesion had been found later. For 9 years she was very well. During the last 6 months she had chilly sensations and was exhausted. Three weeks ago she had had a rigor and a fever of 103.0 degrees with a "streptococcus sore throat." The fever persisted. Her leucocyte count was 19,000. A physician said she had "bad endocarditis" and gave her a course of 7 grams of sulfanilamide. The fever became lower and the leucocyte count dropped. Her heart was enlarged to the right. There was a soft systolic murmur. Her hemoglobin was 84%, erythrocytes 4,150,000 and the leucocytes 9,950. Sedimentation in one hour was 20 mm. There was no petechiae. The liver and spleen could not be felt. Two blood cultures according to a modification of Clawson's method yielded indifferent streptococci. She was given complete bed rest in a hospital for 4 weeks. During this time she received sulfanilamide, 3g. daily, and at first a stock vaccine of indifferent enterococci, then a vaccine of streptococci from her own blood. The vaccine was given subcutaneously in subreaction doses. Blood cultures were sterile after 6 weeks of this treatment. Her temperature became normal after 3 weeks' hospitalization. After leaving the hospital she remained home for 6 weeks administering the vaccine as directed.

She has remained well and working. She maintains a normal temperature and her blood is free from bacteria one year after being discharged from the hospital. Her heart findings are unchanged. Her sedimentation rate is 8 mm. in one hour.

Case 4. (Seen with Dr. W. B. Knox in the West Suburban Hospital.) O. M. was a woman 27 years old. She was a "blue baby," congenital heart disease being diagnosed at birth. Her grandmother and mother are said to have had congenital heart disease and rheumatic fever. The patient had rheumatic fever at 12 and again at 21. She has had a fever, progressive

weakness and palpitation for the last 3 months. 6 weeks ago she suddenly developed right hemiplegia and aphasia. The aphasis disappeared. Some voluntary movement of the right arm and leg have returned.

She had a typical "cafe au lait" color. Her fever was remittent, reaching 102° in the afternoon. The heart was enlarged transversely. The pulse was regular but rapid. There was an apical systolic murmur and thrill. The blood pressure was 95/55. The spleen was palpable. Petechiae were present in the conjunctivae and about the wrists. The nails and lips were deeply cyanotic. The fingers were clubbed.

Hemoglobin was 88%, erythrocytes 4.73, leucocytes 11,100. The urine showed albumen. Numerous blood cultures showed large numbers of greening streptococci until April 10, 1944. She had had sulfathiazol, 4 g. daily for 3 weeks. She was also given 2 g. of gold sodium thiosulphate starting with 0.1 g. intravenously and increased by 0.1 g. at weekly intervals. A vaccine made from the blood streptococci was started April 7 without apparent benefit. 2,800,000 units of penicillin were given intravenously in 13 days terminating April 20, 1944. 700,000 units of the sodium salt of penicillin was dissolved in 1,000 cc. of the diluting fluid which was alternately normal saline and 5% glucose. The dose averaged 200,000 units daily in nearly continuous intravenous drip.

On the fourth day of the penicillin administration the bacteremia disappeared. Cultures of her blood as of Oct. 10, 1944 yielded no growth. The spleen was no longer palpable. The temperature became normal the third day after penicillin was started, went to 100° three days later and has since not exceeded 98.4. The hemoglobin on Aug. 30, 1944 was 89%, with erythrocytes 5,240,000 and leucocytes 9,000. The differential was normal except for an eosinophilia of 6%. The monocytes numbered 4%. The sedimentation rate is now 5 mm. in 1 hour.

COMMENT

That these patients had all apparently had rheumatic fever is quite in accord with the accepted concept of the evolution of bacterial endocarditis. Against the possibility of my patients having rheumatic endocarditis are the repeatedly sterile cultures obtained in my previous studies of patients with classical acute rheumatic fever.[16]

The bacteria isolated although not always greening were of low virulence corresponding in other bacteriological respects with streptococcus viridans. Whether streptococci are indifferent or greening is often only dependent upon the frequency and length of subculturing and of the mediums used.

The "cures" reported may be clinical rather than bacteriologic. Viable bacteria are frequently found in fixed tissue long after illness. It is sensible that the infections in endocarditis vary in virulence as their hosts vary in resistance. These variables give us instances of the disease differing in symptoms and course as well as in prognosis. Here may lie the reason for the dissimilar results obtained by other investigators and by us in the group studied personally.

The infections reported may have only been reduced from activity to latency.

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CHEMOTHERAPY

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Chemotherapy in association with new developments such as modern anesthesia, intestinal decompression, replacement of electrolytes and proteins has introduced a new era in surgery. If one compares morbidity and mortality rates for surgical procedure or treatment of traumatic wounds for a five year period before and after the advent of chemotherapy, one is impressed that a significant improvement has occurred. Under chemotherapy we will include only treatment with drugs of the sulfonamide group, penicillin, tyrothricine, azochloramid and zinc peroxide. Because of the wider use of the sulfonamides and the recent encouraging results with penicillin, these two groups will be discussed more in detail.

SULFONAMIDES

In spite of an enviable record we must not consider that the sulfonamides will do all the work for us, as too many might be led to believe from occasional experiences of a miraculous result. The sulfonamides are not a "cure-all" in any type of surgical infection, whether it is a traumatic wound or an operation in an infected area. The enthusiasm for chemotherapy should not lead one to neglect other principles which are fundamental in good surgery. The use of sulfonamides should not minimize the necessity of surgical asepsis. In the words of Graham, "The day of Listerism is not yet gone; the sulfonamides will not replace surgical asepsis."[1]

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Without minimizing the great advance that chemotherapy and the sulfonamides have given to surgery, it is necessary to warn against their being accepted as the panacea for all ills. It must be repeatedly stressed that chemotherapy is a valuable adjunct in surgical therapy but that it has its limitations and principles of good surgical judgment and technic must always be in the foreground in any surgical case. Moreover, as Meleney[2] pointed out, it is not justifiable in comparing statistics of surgical results of five years ago with those of the present day to give all the credit to sulfonamide therapy, since in the past few years various other factors came on the scene which have helped the surgical patient.

Meleney[3] furthermore stresses particularly the difference between surgical and medical infections regarding sulfonamides. Whereas in medical infections one deals with a condition which by its nature facilitates the contact and the action of the drug on the infective organism; in surgical infections the opposite frequently holds true. It is therefore necessary to recognize the predominant importance of surgical management and of the physiological factors in wound infection and wound healing in surgical infections, since in these chemotherapy is only of an adjuvant nature.

The sulfonamides can be used under any and all conditions although certain diseases do better with one type than another. Their administration is compatible with any type of anesthesia, they will not influence adversely other types of treatment nor will they affect the course and treatment of shock. They can be used prophylactically or therapeutically by oral, parenteral or local application.

ORAL USE. Most of the sulfonamides (sulfanilamide, sulfadiazine, sulfathiazole, sulfamerazine, sulfaguanidine and succinylsulfathiazole) can be given orally. If given early they do cut down the incidence of septicemea and death and may lessen the incidence of local infection. This observation has been made by many surgeons. The local use of sulfonamides should be supplemented by oral or parenteral administration. Sulfadiazine, sulfathiazole or sulfamerazine is the drug of choice for oral or parenteral use. Following 5 or 10 grams of either sulfanilamide, sulfathiazole or sulfadi-

azine intraperitoneally, oral or intravenous chemotherapy supplementally should not be started until the blood level indicates the need for further therapy and then treatment should be continuous until the patient has clinically improved as seen by the disappearance of temperature and general well being. Oral sulfonamides can be used for any condition in which sulfonamide therapy is indicated and in which the patient can take sulfonamides by mouth.

The average initial dose of sulfanilamide, sulfathiazole, sulfadiazine and sulfamerazine for an adult is 4 grams. Subsequent doses are 1 gram every four hours except in the case of sulfamerazine when the time interval may be longer (about 6 hours).

Bowel surgery has greatly benefited from the use of the insoluble sulfonamides (sulfaguanidine and succinylsulfathiazole). Both of them seem to decrease the number of coliform organisms in the intestine and the incidence of peritonitis following surgery of the large bowel. Sulfaguanidine should be given with caution when there is ulceration of the mucosa or when there is intestinal obstruction.

The action of sulfaguanidine or succinylsulfathiazole is impaired during diarrhea or constipation. Liquid petrolatum or other cathartics should not be used at the same time. In patients receiving sulfaguanidine or succinylsulfathiazole, the proper preoperative preparation consists of the omission of enemas, cathartics and petrolatum. The drug should be given in full doses and the optimal time for surgery should be judged by the bacterial counts on the stools. The drug could be given immediately after operation as soon as water is taken. It should be emphasized that succinylsulfathiazole and sulfaguanidine are only adjuncts to surgery of the lower intestinal tract and they should not be permitted to nullify observance of well established surgical principles in the pre- and post-operative care of such patients.

The dose for sulfaguanadine is 0.25 grams per kilogram of body weight divided in six doses for 24 hours. The dose of succinylsulfathiazole is 0.25 grams per kilogram of body weight as initial dose and then divided in 6 doses for 24 hours.

Phthalylsufathiazole, which is a new sulfonamide substance, promises to be useful in enteric infections.

PARENTERAL USE. The sodium salts of sulfadiazine, sulfathiazole and sulfanilamide can be given parenterally. The indications for parenteral use are inability of the patient to take sulfonamides orally or when a rapid blood concentration is desired. Five grams of sodium sulfadiazine at once or in two doses will suffice for 24 hours. Sulfathiazole should be given in about 2-gram doses every 6 hours to maintain appropriate blood concentration.

Subcutaneously, 0.8% of sulfanilamide has been used with success in streptococcus infections. Recently, the use of 0.5% sodium sulfathiazole or 1% sodium sulfadiazine has also been suggested for subcutaneous use.[4]

The increased solubility of acetylated sulfonamides in alkaline urine suggests the addition of alkali as good treatment. Two and a half grams of soda bicarbonate should be given with each dose of sulfonamides. Fluids should be forced so that a daily urinary output of at least 1500 cc. is obtained. Recently, the value of intravenous 1/6 molar soduim r-lactate in producing an alkali urine for sulfadiazine therapy has been shown.[5]

LOCAL USE. The local use of sulfonamides has especially come to the foreground since the enthusiastic reports from Pearl Harbor where the favorable results among the many casualties were ascribed to the free and general use of sulfonamides in wounds. Here too, however, one must not be misled by general enthusiasm but examine the indications critically. There are certain conditions which must be met in order to get the maximal benefit from the local use of sulfonamides. Fundamentally these conditions are based on the use of good surgical technic. Thus, the condition of the wound at the time sulfonamides are applied is of importance. Poorly debrided wounds are unsuitable for sulfonamide application. Necrotic material and pus contain large amounts of para-aminobenzoic acid which inhibit the action of sulfonamides and for that same reason wounds cannot be closed too tight as they will cause sloughing of necrotic material.

Thus far, sulfanilamide has proven itself best for local use because it is most rapidly absorbed and because a small crystalline structure causes less irritation than the other forms. Sulfanilamide is best for local use whether it is in various types

of external wounds or in the peritoneal cavity. To date its use intraperitoneally has not been associated with any untoward reactions in spite of its wide spread usage. It has definitely been effective in combating and minimizing peritoneal infection. From observations to date and from experimental results there does not seem to be any interference with wound healing by the local application of sulfanilamide. It may lead in some wounds to an increased serum production.

As stated above, sulfanilamide is easily absorbed regardless of the site. Sulfathiazole is less soluble, tends to cake and may create more foreign body reactions. It, however, is active against more organisms; hence, some surgeons prefer sulfathiazole mixed with equal amounts of sulfanilamide for local use. Waugh[6] believes that sulfathiazole may be the more valuable drug intraperitoneally following perforative appendicitis because it remains longer in the peritoneal cavity, it stimulates local cellular response and is a polyvalent anti-bacterial agent. Recently a micro-crystalline form of sulfathiazole has been recommended. Sulfadiazine can be successfully used intraperitoneally. It is less irritating than sulfathiazole, more effective and longer lasting.[7]

The dosage of sulfanilamide for local use as given by the National Research Council is approximately 0.1 grams per square inch although larger doses up to 20 grams may be instilled into larger wounds. More sulfanilamide may be instilled if the wound remains open. Some[8] including ourselves believe that the sulfanilamide should be frosted or sprinkled thinly into the wound and distributed evenly and uniformly. Others[9] feel that it is better to dump the sulfanilamide at the desired point rather than to spread it inasmuch as the dumping causes a high concentration at the desired area and it also prevents the possible spread of any infection present.

In civilian practice when sulfanilamide is used locally in compound wounds, the wounds may be closed primarily. In military cases, or in dirty wounds, it is best to permit closure by secondary intention. Exceptions to the latter are wounds of the abdomen, chest, hands or brain. It is important that hemostasis exists before sulfanilamide is applied since otherwise the drug is washed out from the wound and is prevented from actual contact with the contaminated tissue. Because of the beneficial results obtained from the local use of sulfonamides in infected wounds, some have advocated its use in any type of wound, even clean wounds, except in patients with facial lesions.

Ravdin and his associates state[10], "Peritonitis has become an infrequent occurrence in this clinic since the introduction of the prophylactic use of sulfanilamide." Waugh and others agree with that statement, although they feel that improvement in pre- and post-operative measures may have had quite a bit to do with it. Waugh[6] points out the mortality rate of peritonitis, secondary to perforative appendicitis, has dropped from 16.9% in the previous five years to 3.8% in the five years of sufonamide use.

Whenever sulfonamides are given, untoward results may occur.[11] As a rule, compared to the large number of patients taking sulfonamides, the reactions are infrequent and not of a serious nature. Serious results may occur as toxic hepatitis, dermatitis, hematuria, aplastic anemia, agranulocytosis, leukopenia and purpura; therefore injudicious use of sulfonamides is prohibited. While sulfonamides are being used, the blood level should be frequently determined for the concentration of the drug in the free and acetylated form. Febrile reactions may occur following some sulfonamides and, at times, following a readministration of any of the drugs.[12] According to some, they are more common following prolonged sulfadiazine.[13]

The local reactions which may occur after local use of sulfonamides have been discussed. They too are rather infrequent and, at most, manifest themselves in some signs of local irritations. However, general reactions may occur from the use of sulfonamides locally. Any appearance or toxic signs following the use of sulfonamides must be immediately treated energetically. The fear that following the use of sulfonamides intraperitoneally adhesions may form has not borne out. In thousands of patients on whom sulfonamides have been used, adhesions or other types of peritoneal reactions have rarely been encountered. Experimentally, however, adhesions were produced in dogs with sulfathiazole and these adhesions could be prevented by the simultaneous use of Heparin.[14] The local use of sulfathiazole causes more reaction

and reports of convulsions following its use on the brain have been reported.[15]

URINARY TRACT. The organisms of the colon group and staphylococcus group are very susceptible to sulfathiazole, sulfadiazine or sulamyd; sulfathiazole being preferable for staphylococcus. Hence, in any infections of the urinary tract, these three substances have been found very successful. Sulfadiazine or sulfathiazole in doses of 3 to 6 grams daily are used. While sulfonamides are used in urinary infections, any obstruction to the free flow of urine must be removed. Fluids should be forced and the urine should be alkalinized by the oral intake of either bicarbonate or sodium citrate. It is advisable to use sulfonamides in smaller doses prophylactically prior to instrumentation of the urinary tract and in cases with indwelling catheter.

FRACTURES: The incidence of infection in compound fractures has been reduced by the use of sulfonamides. However, the results are not always striking and, frequently, it seems that the bacterial infection is merely delayed or attenuated. In these wounds, which have fractured bones exposed, contamination is very likely to occur if they are left open; hence, it is better to close them completely especially if seen within six to eight hours. The combined local and systemic or the systemic use of sulfonamides alone have not decreased the number of local infections in this type of case, although the incidence of septicemea has been lower.

OSTEOMYELITIS. Sulfonamide therapy has been of help here especially in carrying the patient over the initial period of septicemia. However, abscesses have formed and had to be drained surgically as the necrotic, contaminated and purulent material found in these abscesses inhibits sulfonamide action.

BURNS: In burns various sulfonamide dressings have been used with encouraging results. A recommended sulfonamide dressing is 3% sulfadiazine in 8% triethanolamine applied as a spray until a thin, pliable elastic and translucent eschar results.[16] Recently, sulfonamide ointments ready for use as prepared dressings have been found of value in the treatment of burns.

SOFT PARTS WOUNDS. Extensive studies[2] have shown that, just as in cases with compound fractures, sulfonamides locally or generally do not decrease the incidence of local infection even though the morbidity and mortality has been decreased. Nevertheless for prophylaxis of wound infection, especially if proper surgical treatment must be delayed, it is advisable to locally instil sulfanilamide alone or mixed with sulfathiazole, and at the same time, give the patient sulfadiazine orally or parenterally.

GAS GANGRENE. Gas gangrene can be treated with a mixture of sulfanilamide and sulfathiazole after primary debridement and by large doses of sulfathiazole by mouth in addition to the usual measures (antitoxin). Here too, however, the sulfonamides are not very successful.

Among other surgical conditions in which the use of sulfonamides either prophylactically or therapeutically is beneficial we can mention preoperatively: thrombophlebitis, primary peritonitis, cholangitis, intra-abdominal abscesses, carbuncles, furuncles, ileitis, diverticulitis, ulcerative colitis; and post-operatively, pulmonary atalectasis and others.

According to Long[3], a combination of systemic with local therapy offers the best chance for prevention of wound infection and for its cure once it has become established. He suggests sulfadiazine orally in doses high enough to maintain a blood concentration of 4 to 7 mg. per 100 cc. as the best suitable drug for systemic administration and sulfanilamide alone for local use. Daily blood levels, blood counts and urinalysis should be done. In the absence of clinical infection, there is no reason to continue oral therapy for more than five to seven days. Occasionally, organisms become resistant to sulfonamides. This usually occurs after small doses of sulfonamides (ineffective) have been given for a long time.

In children, sulfonamides solution may be given intraperitoneally or intrasternally.

Because of the fact that sulfanilamide is inactive in areas containing necrotic purulent material, attempts were made to combine this drug with substances that act in the presence of such tissues. Recently it has been shown that a mildly oxidizing agent (azochloramide 1:3000) may potentiate the action of sulfanilamide.[17] Allantoin and urea[18] also have been suggested to combat the effect of sulfonamide inhibitor substances on necrotic tissues. The field of sulfonamide

potentiation has only recently been started to be investigated.

PENICILLIN

One of the newest and most highly promising substances in the field of chemotherapy is penicillin. The data are so new and such rapid changes have occurred in potency and mode of employment that no definite statements can be made now which will not be obsolete in a short time. It is seen, however, that this substance will complement the sulfonamides in many infections. To date, some of the reports stress the fact that certain infections in which sulfonamides have proven ineffective, the addition of penicillin has resulted in miraculous cures. Penicillin is used in the form of sodium or calcium salt.[10] It is comparatively stable but must be kept at a comparatively low temperature, now over 50° F. Penicillin is destroyed by boiling, by acids, by alkali, by certain heavy metals and by oxidizing agents. Penicillin cannot therefore be given orally unless in a form which prevents decomposition in the gastro-intestinal tract. Because it is rapidly excreted from the blood into the urine, it must be given at frequent intervals. Most of the penicillin can be recovered from the urine as the pure drug; some of it is inactivated in the body.

The mode of action of penicillin is unknown although some studies point to a bacteriostatic effect.[20] Others[21] state that penicillin actually kills organisms. Penicillin acts slowly. In the usual concentration given it does not affect leucocytes. It acts in the presence of pus, blood, serum and tissue lysates.

Penicillin is of low toxicity, and it is thought that whatever is present is due to impurities. No anemia or leucopenia has been observed. No local reactions occur from its intramuscular injection, especially when it is dissolved in normal saline. The toxic dose was found to be about sixty-four times the therapeutic dose; hence, it has a wide margin of safety.

Penicillin is most effective against gram positive organisms, and less so, or not at all, against gram negative organisms with the exception of meningococci and gonococci. It does not affect the tubercle bacilli, typhoid, dysentary of Friedlander bacilli. In vitro, anthrax and actinomycosis were found susceptible to its action.[22]

According to reports, penicillin is superior to any of the sulfonamides in the treatment of staphylococcus infections with and without bacteremia, including acute osteomyelitis, cellulitis, empyemia, infected wounds, meningitis, and carbuncles. It is quite effective in hemolytic streptococcal, pneumococcic, gonococcic infections, and anerobic streptococci. The results with sulfonamide resistant gonorrhea and pneumonia are striking. It is of questionable value in ruptured appendix, liver abscesses and urinary tract infections and also in the treatment of subacute bacterial endocarditis.

The dose of penicillin varies from 50,000 to 100,000 units or more daily depending on the type of infection. Adequate dosage has not been definitely established. It is given intravenously or intramuscularly. The solutions should be made shortly before use. For intravenous use one-half of the daily dose is dissolved in 1000 cc. normal saline or 5% dextrose. The first 100 to 200 cc. should be given rapidly, then the rate is reduced to 30 to 40 drops so patient will receive 2000 to 5000 units per hour. Intramuscularly, about 10,000 to 20,000 units are given every three to four hours.

For the treatment of infected or pleural inflammation, penicillin may be injected directly into these cavities. It has been recommended that abscesses be aspirated when possible instead of incised so that the cavity can be maintained in which to inject the drug. Penicillin can also be given through the subarachnoid space in the treatment of meningitis. For infection into empyema cavities after aspiration of pus or fluid, 30,000 to 40,000 units, depending upon the size of the cavity, may be used. Penicillin solution should not be used for irrigation since at least six to eight hours are required for a maximal effect.

The value of penicillin in surgery may become more apparent when more reports of its effect in osteomyelitis and other staphylococcus infections which have been resistant to previous therapy become more numerous. Already to date it appears that penicillin will be of great help in clearing up these resistant cases of chronic osteomyelitis and pyemia cavities and possibly actinomycosis fistulae which heretofore have been the bane of the surgeon. The results following penicillin are usually prompt and, at times, quite striking. The temperature chart is not a good criterion of the progress; better evidence is ob-

tained from the blood cultures, subsidence of pain and improvement in the general state.

TYROTHRICIN

A substance related to penicillin which has been found effective in the local treatment of infections is tyrothricin.[22,23] Isolated from Bacillus brevis this substance consists of two fractions — gramicidin and tyrocidin. Tyrothricin possesses a relatively low toxicity. However, it cannot be given subcutaneously or intravenously because it produces hemolysis. It is used in the form of a suspension containing 500 micrograms per cubic centimeter. This suspension as prepared is isotonic and entirely safe for general use locally. Herrell has reported on its use in a large series of cases with various types of lesions (ulcers, wounds, sinus disease, bone lesions, bladder and peura) and with a variety of organisms.

For the successful treatment with tyrothricin it is important that it comes into direct contact with the infecting bacteria. It kills gram-positive anaerobic bacteria with great rapidity. It is not destructive to tissues. Because it is insoluble in water, it does not penetrate tissues and hence does not produce toxic symptoms following local application. Tyrothricine is a valuable agent to supplement surgical procedures where the local use of sulfonamides have failed. Because tyrothricin must come into actual contact with the bacteria to be effective, it, like penicillin, cannot be used for irrigation but must remain for sometime in contact with the lesion. Furthermore, because of this characteristic, it seems to be more effective in acute infections where the infected organism is nearer the surface than in chronic infection. It is very successful in streptococcic ulcers. It does not affect Escherichlia coli, Proteus or Friedlander's bacillus. Because of the fact that penicillin is more soluable and penetrates the tissues, it is likely that when penicillin becomes more easily obtainable, it will supplant tyrothricin.

AZOCHLORAMID

In the last few years azochloramid[24] has been used comparatively widely in the local treatment of wounds. Azochloramid is a chlorine solution which liberates chloride at a very slow rate. This permits the dressings to remain effective for a long period of time when in contact with wounds. It is a non-irritating and effective general bacterial agent. It is usually used in saline solution 1:3300. It can be used for irrigation and can be used as moist packs and dressings. It is superior to Dakin's solution in that it does not react with organic matter. It too may become less useful when more penicillin is available.

ZINC PEROXIDE

In the past decade zinc peroxide was introduced in the treatment of many different types of surgical infection, particularly those in which the causal organism was shown to be micro-aerophlic or anaerobic as well as infections produced by the hemolytic streptococci. In general it has been found that bacteriologic studies of the wounds should be made before the zinc peroxide is used. Infections produced by anaerobic organisms respond readily to zinc peroxide. Cuts which frequently contain organisms responding to zinc peroxide, are those found in the mouth, around the vagina and rectum and those due to gunshots or to lacerations obtained in dirty areas. The use of zinc peroxide in infected wounds was started by Meleney[25] following some experiments on a series of chronic undermining ulcers. It has proven to be a valuable adjuvant in the treatment of infections due to anaerobic bacteria. Meleney suggested its use in ulcerative colitis as an enema.

SUMMARY AND CONCLUSION

Chemotherapy has proven itself a valuable adjuvant to the surgeon although it has certain limitations which must be recognized.

The sulfonamides are powerful chemotherapy agents, specific in their action on certain organisms and without effect on others. They can be used locally, enterally or parenterally. They are inhibited by pus, necrotic material and tissue juices; hence, must be used locally only after those substances are removed.

Penicillin promises to be even more effective than sulfonamides and it appears to affect more organisms than the sulfonamides. It has the advantage that it is more penetrating, non-toxic and can act even in the presence of pus and necrotic material.

Tyrothricin kills bacteria when used locally in infected cuts. It cannot be used systemically and it may be superceded by penicillin.

The other chemotherapy agents, azochloramid and zinc peroxide, are somewhat older chemotherapeutic agents which may become over-

shadowed in the near future by the greater availability of penicillin.

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SULFADIAZINE BRINGS ABOUT RECOVERY IN RARE DISEASE

A sulfanilamide derivative — sulfadiazine — brought about the recovery of a physician suffering from the rare but usually fatal pneumonic plague, Edgar J. Munter, M.D., of the U. S. Public Health Service, San Francisco, reports in the May 2 issue of *The Journal of the American Medical Association.*

"As far as I am aware," Dr. Munter says, "this case is the first to be reported in which primary pneumonic plague has been treated by the use of sulfadiazine and the patient has recovered."

The physician who suffered from this form of plague involving the lungs had been engaged in research investigations at the Plague Investigation Station of the U. S. Public Health Service in San Francisco.

In addition to the large doses of sulfadiazine, the patient was also given penicillin, but Dr. Munter says that "there was no evidence that the administration of this drug altered the course of the disease."

Pneumonic plague, caused by a germ, is an infectious disease of an extremely virulent nature, and is usually fatal. Although it is comparatively rare in the United States, several cases were reported in 1924.

GOLD THERAPY IN RHEUMATOID ARTHRITIS

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Arthritis is the most prevalent of all chronic diseases. In the United States the number of persons afflicted by it is probably over seven million. It has been estimated that nearly one hundred million man days are lost each year in this country on account of the group of diseases commonly called rheumatism. This is a greater loss of effective manpower than that caused by any other group of diseases with the exception only of mental and nervous disorders. Likewise arthritis is the oldest disease of which record can be found. Evidence of disease of the joints has been preserved in pre-historic animal remains, which have lain buried for hundreds of millions of years, and evidence of arthritis has also been demonstrated in the earliest human remains which have been unearthed.

Rheumatoid arthritis constitutes a very large percent of all cases of arthritis. This discussion deals with a method of treatment of rheumatoid arthritis and since this method is almost entirely ineffective in the treatment of any other form of arthritis, I believe it is important to dwell for a moment on the nature of the disease.

As you well know, no one has ever advanced a satisfactory theory as to the cause of this disorder. It has numerous characteristics of an infection and seems to be related to streptococcus hemolyticus, since serum agglutinins to this microorganism are often found in high titre. The evidence, however, is all indirect. The possibility of bacterial allergy and of bacterial toxins as causes, has been considered by those who have studied this form of arthritis. There are those, too, who advanced such theories as disordered metabolism, food allergy, endocrine disturbances and vitamin deficiencies, but none of these last theories has many adherants and we must await further work on the problem.

Rheumatoid arthritis characteristically develops insidiously, usually in young to middle aged persons, who have experienced some degree of ill health from infectious, metabolic, endocrine or other disorders. At the outset there is often fatigue, exhaustion, loss of weight and a

Chairman's Address, Section on Medicine, Illinois State Medical Society, May 17, 1944.

general decline of health, all of which lead up to the characteristic joint manifestations. These early signs are accompanied by low grade fever, mild leucocytosis, anemia, tachycardia, an increase in the erythrocyte sedimentation rate, and finally by intermittent or constant pains in certain joints. As the joints become involved it is usual to find the body affected symmetrically. The joints of the extremities, especially the proximal interphalangeal joints of the hands, are frequently affected first, and there is a tendency for this involvement to progress toward the trunk. The fusiform appearance of the fingers is very typical of early rheumatoid arthritis. From these beginnings the course is toward chronicity with remissions and relapses, until in cases of long standing there may be atrophy of muscles, contractures, destruction of articular surfaces, cachexia and invalidism. On the other hand, this unhappy sequence, occasionally, and for no easily explained reason, may become arrested with or without treatment. And it is important to bear this in mind in the evaluation of this, or any other form of therapy.

By the means at our disposal some of these changes may be prevented, and some of them may even be reversed. The usual therapeutic measures, including analgesic drugs, physical therapy, vitamin therapy, in moderate or heroic amounts, vaccines, climatotherapy, and the removal of foci of infection are familiar to us all, and it is to be regretted that none of them has brought relief to more than a comparatively small percent of those afflicted by this disease. It is likely that through the efforts of those who have devoted their lives to the understanding and treatment of arthritis, better methods and better drugs will continue to be developed to combat the disease.

I think it is proper to say that the use of certain gold compounds gives the greatest hope of relieving, arresting and possibly in some instances of curing rheumatoid arthritis. Gold came into some prominence in the mid-1920's in the treatment of tuberculosis. In France and Austria certain similarities between tuberculous joint disease and rheumatoid arthritis were observed. Perhaps these observations led to its use in the latter disease. At any rate both in France and in Germany gold salts soon began to be used in the treatment of rheumatoid arthritis. These studies were quickly followed by studies in England. The initial highly favorable results were soon tempered by severe, and occasionally fatal reactions so that the enthusiasm with which the use of gold had been hailed, diminished, especially in the United States. Accordingly, it was not until the mid-1930's that clinical investigations, with improved preparations and methods, got under way in this country. Nearly all the reports of the use of gold salts appearing in the literature before 1939 came from Great Britain and Europe. In the United States the names of Boots, Cecil, Dawson, Freyberg, Hartung, Hench and Key, to mention only a very few, have been prominently associated with the study of this method of treatment in the last seven years.

It is generally recognized that the use of gold salts in rheumatoid arthritis is not without danger to the patient even under careful clinical observation and laboratory control. Without this observation and control, its use in the present state of our knowledge is definitely not to be undertaken. Many careful clinicians have withheld their approval of the use of gold because of the inherent dangers connected with its use. Tegner as late as 1939 bespoke these feelings when he stated that, "a disease of unknown etiology was being treated with a drug of unknown action but of widely known toxic properties." In the last five years, however, a very considerable amount of careful work has been done and much valuable knowledge has been gained. And I think it is proper to observe that the use of gold salts in rheumatoid arthritis is constantly and with justification gaining ground in the United States. The danger associated with the use of gold salts in this disease has its origin in two facts — first, gold salts are eliminated from the body very slowly, often over a period of many months after treatment has been discontinued, and second, there has not been found any effective method of treating the toxic reactions when they occur.

It should be emphasized that the general therapeutic measures which have gained approval through the years should always be continued in conjunction with gold salt therapy. Of these, physical and mental rest comes first if the disease is active, that is if there are fever, blood changes and acutely swollen and pain-

ful joints. Physical therapy, including heat, hydrotherapy, gentle massage and at times, short wave diathermy are helpful. Exercise is important, especially if weight bearing can be avoided, but it is best to forego any activity in the acute stage of the disease. Of the analgesic drugs, acetylsalicylic acid takes first place in doses of 0.6 gram, and 2½ grams daily are usually well tolerated. The correction of iron deficiency anemia by appropriate therapy is important. It is interesting that there are those who believe that the gold therapy itself, if small amounts are used, stimulates the blood forming organs and tends to correct the anemia. The better plan is to give iron anyway. Transfusions of whole blood serve the purpose of helping the anemia, and also they seem sometimes to have a beneficial action on the arthritis, and it is probable that transfusions as a therapeutic measure are not used often enough. It is generally believed that special diets which are unbalanced in their fundamental constituents are of no value. The use of large, even massive amounts of vitamins has not won the approval of more than a small number of students of arthritis. At present they have largely been discarded. It is important to emphasize that gold salts should be used early and in conjunction with all these measures and not reserved as a last resort, after the failure of other means of treatment. All agree that gold is much more effective in early than in late rheumatoid arthritis.

In the United States there are now three salts of gold which are used in rheumatoid arthritis, practically to the exclusion of all others. They are gold sodium thiomalate (Myochrysine), gold thioglucose (solganol-B Oleosum) and gold sodium thiosulphate. The first two contain 50% of gold, and the last 37% of gold. All are soluble salts, that is they are largely excreted in the urine. The thioglucose is supplied as an emulsion for the purpose of retarding the rate of absorption. The effects of these salts are practically identical and dosage is the same, measured, of course, according to their gold content. In addition to these three salts of gold, there has been developed a compound known as Lauron which is aurothioglycoanilide. This compound was introduced by Dr. M. J. Lewenstein of Amsterdam, Holland. It is undergoing clinical investigation in this country. Preliminary reports on this preparation have indicated a lower toxicity than in the other three commonly used salts, but perhaps also a diminished therapeutic value. It has been proved that the therapeutic effect of gold salts is due to their contents of gold, since these salts, devoid of the gold radicle, are entirely without value in this disease. There has been a tendency in the last few years, largely as the result of work by Freyberg and his associates at the University of Michigan, to give smaller doses of gold and perhaps smaller total amounts than were usual some years ago. Accordingly, doses usually begin at 5 or 7½ mg. of the metal and progress rapidly at weekly intervals to 25 or possibly in some cases to 50 mg. The total amount of gold given is usually limited to 500 or 600 mg. of the metal in any one course.

As stated before, very careful observation of the patient for signs of toxicity is exceedingly important. These may manifest themselves in their early stages by pruritis, sore mouth, loss of appetite, albuminuria, a rash, etc. The urine should be examined each week both chemically and microscopically. The erythrocyte sedimentation rate should be determined about every three weeks and the blood examined somewhat more frequently. If these are done regularly in conjunction with careful clinical examination of the patient, the earliest signs of toxicity are not likely to escape notice. The limiting of the maximum individual dose to 25 mg. of gold makes the occurrence of reactions less likely.

Physiology: The metabolism of the soluble gold salts is very imperfectly understood. The form in which they circulate in the blood has never been determined. It is known that the plasma contains practically all the gold which is in the blood. The blood cells contain practically none. The kidney is the only organ in which significant amounts of soluble gold salts are to be found. In contrast to this, the insoluble gold salts such as colloidal gold and colloidal gold sulfide are found mainly in the liver. These insoluble salts are practically inert as far as the rheumatoid arthritis is concerned and they produce damage to the liver where they are taken up by the reticuloendothelial cells. It is an interesting fact that soluble gold salts are excreted in appreciably larger amounts in the first 24 hours after injection, although this

amount may be not more than 10% of the amount injected. The conclusion drawn from this is, that while nearly all of the gold becomes bound in a less easily excreted form, some of it is thrown out by the kidney before this binding takes place. It has been demonstrated that gold is present in the synovial fluid in no greater and usually in smaller amounts than in the plasma. This indicates that the action of gold is primarily not local. Since only a small percent of the gold injected is excreted in the usual seven day interval between injections, there is a constantly increasing accumulation of the metal in the body, and the larger the individual dose is, the larger will be this accumulation. With doses of 50 mg. of the metal, gold will be found in the plasma for from six months to more than one year after discontinuation of treatment, while with doses of 12½ mg. the plasma becomes gold free in from one to three months. It has been demonstrated by Freyberg that the plasma concentration of gold does not increase appreciably when the size of the individual dose remains constant. The amount of gold retained by the body at the conclusion of a course of injections is well over 80% of the total amount injected in an average course.

The beneficial effects of gold salts seem to be directly related to their solubility. Some four years ago gold calcium thiomalate was developed, and it was hoped that because of its low solubility as compared especially with the sodium thiomalate and the thiosulfate, its potential toxicity would be lessened. It was found on the contrary that probably because of this lessened solubility, its action was unpredictable, its therapeutic effects, generally were lessened, and its potential toxicity was increased. The oil suspension of gold thioglucose decreases its solubility by about 1/3 and plasma concentrations are approximately ½ of those reported when the thiomalate or thiosulfate is used. It is a debatable question whether or not retardation of solubility of gold salts is a desirable feature of gold salt therapy. Gold salts, even the soluble salts, are very slowly excreted and this fact is coupled with their accumulation in the body during a course of gold therapy. The mounting accumulation of a toxic drug such as gold is cause for concern when toxic reactions occur, for it means that the reactions may extend for long periods — that is until the gold has been eliminated from the body. It is generally recognized that no salt of gold which is lacking in potential toxicity has therapeutic value in the treatment of rheumatoid arthritis. It would be very helpful if a means of gauging the dosage of gold salts could be established by blood plasma determinations of gold as can be done in the potassium thiocyanate treatment of hypertension. This has been attempted by Freyberg, but the results were disappointing. It was found that the plasma gold levels seemed to bear no very direct relationship to the frequency or the severity of toxic reactions. As the result of these investigations, the conclusion was that toxicity in gold therapy is rarely due to parenchymatous poisoning except when the kidney is involved. That this toxicity might be in some way related to allergy in a very broad use of the word, has been considered. In an attempt to substantiate this, gold as metal or as soluble salt, alone or in combination with plasma, was used in cutaneous and intracutaneous test in patients suffering from toxic reactions to gold therapy, in patients without reactions to gold therapy, and in patients not treated with gold. The results were entirely negative in identifying the nature of a possible allergic basis of toxic reactions. Therefore the hope of recognition of early toxicity by these means must await further investigations.

Toxic Reactions: It has been shown without question that the frequency and severity of toxic reactions parallel the rate of administration of the drug. That being the case, the lowest rate of administration consistent with therapeutic efficiency is desirable. Total amounts administered usually should not exceed 500 mg. of the metal in any one course and 25 mg. is probably the maximal desirable individual dose.

The most frequent toxic reactions involve the skin. They are not usually very serious. There may be only a fine desquamation of the eyelids. Pruritis alone is not usually considered sufficient cause to discontinue treatment. Most other skin manifestations such as herpes, folliculitis furunculosis, and exfoliative dermatitis call for a temporary or permanent discontinuation of treatment. Probably the most serious toxic reactions involve the blood. Of these, granulocytopenia, and thrombocytopenia, hemorrhagic manifestations and aplastic anemia are espe-

cially to be feared. These almost always necessitate permanent abandonment of gold therapy. Ulcerative lesions of the mouth and the intestinal tract, nephritis and hepatitis are relatively uncommon manifestations of gold intolerance. As stated before, it is very important that a careful examination of the patient be made before each injection for the purpose of early recognition of any of these changes.

The erythrocyte sedimentation rate is considered a helpful index of the state of the patient. It is generally believed that with a markedly increased rate, treatment should be continued, and that with a rate approaching normal, the treatment should proceed cautiously. The general condition of the patient is always to be considered in the interpretation of the sedimentation rate. Clinical improvement, in the presence of a rapid sedimentation rate is likely to be temporary. Toxic reactions seem to occur less frequently when the sedimentation rate is high.

The chance of a patient's having some sort of reaction ranges from 35 to 50 percent, but the chance of a serious reaction is very small. These various reactions are the only obstacle to more general use of gold salt therapy.

Results of treatment: It is difficult to evaluate the results of gold therapy in rheumatoid arthritis. A complete return to a normal life is the goal of all treatment. Too often it cannot be attained. Statistics by different investigators are sometimes difficult of comparison. In general, it can be said that between 60 and 70 percent of those people treated by this method will have a remission or be markedly improved. Those cases treated within the first year of the disease are more likely to experience good results. It should be emphasized that gold salts only arrest inflammatory processes in rheumatoid arthritis. They do not repair damage already done.

It is usually considered advisable to give a second course of gold within 1½ to 3 months after a first course, no matter how good the results of the first course have been. Sometimes several courses are needed. It is generally believed that the maximum improvement is to be derived from the first course. In other words, the patient is not likely to be better after the second or subsequent courses than after the first one. Relapses are the most discouraging feature of gold therapy. They occur in from 30 to 50 percent of patients who have had one course, often in from 3 to 4 months after the course has been completed. The earlier the case is treated, the less likely are relapses to occur.

The comparatively short duration of the studies of gold therapy makes it desirable to maintain a conservative attitude concerning the final evaluation of this drug. It is fair to say that no other method of treatment has even approached the use of gold in relieving the patient. Complete arrest of rheumatoid arthritis, as the result of gold treatment, occurs too seldom. Great improvement including those completely relieved and implying a return to a reasonably satisfactory state of health may be hoped for in from 60 to 70 percent of those treated. Another 15 percent are apparently helped moderately or slightly. Then there will be about 15 or 20 percent who are not helped at all.

Contraindications: In general, gold salt treatment should not be undertaken in the presence of disorders which, themselves resemble toxic reactions to gold therapy. Thus it is definitely contraindicated in most skin disorders except psoriasis, in the presence of hemorrhagic tendencies, nephritis, hepatitis, ulcerative colitis, diseases of the blood forming organs and in marked allergic states. It is contraindicated also in pregnancy and in diabetes mellitus.

CONCLUSIONS

In conclusion, I should like to point out that while the use of gold salts in the treatment of this very distressing disease is not the ideal solution of our therapeutic needs, it offers much more chance of giving lasting relief than any other method or group of methods thus far developed. We may fear the toxic reactions which are to be expected in some of these patients, and also the possibility of permanent damage to the liver, the kidneys or to other organs. But I believe that when one compares the results of gold therapy with those of any other means of treatment, he should take heart. It is axiomatic that every precaution in the prevention of toxic reactions must be taken, and this implies very careful supervision of the patient by the physician at all stages of treatment as well as afterwards. It is not an easy program for patient or physician. We may look forward, however,

to the time when still better methods will be placed at our disposal, when a better understanding of the disease and its treatment will enable us to help a greater number of these afflicted people, and with less danger to them.

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ACTIVITIES OF THE DIVISION OF MATERNAL AND CHILD HYGIENE

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The Illinois Department of Public Health, for administrative reasons, is divided into 15 divisions such as the Division of Sanitary Engineering, the Division of Vital Statistics, the Division for Venereal Disease Control, etc. It might seem that only the Division of Maternal and Child Hygiene is specifically interested in the pregnant woman and in children of all ages, but, as will be demonstrated, there is considerable overlapping with other divisions which also have programs for the same groups. Furthermore, Maternal and Child Hygiene divisional programs are not entirely limited directly to children and mothers as is easily recognized in the fields of nutrition, social hygiene, and the hospital program for the distribution of human plasma and serum.

Thus, the Division does not stand alone in the field of Maternal and Child Hygiene. It is part of the State Department team of divisions, working closely with all of them, but has the responsibility for quarterbacking the attack in the fields of maternal, infant, pre-school and school health; keeping in mind at all times that someone else may call a good play, and that the rest of the team — those who carry the ball and tackle the job — those who receive the plaudits — are in the local health departments and medical societies.

Almost all of the Division functions will fall into one of the following classifications:

1) Formulation of policies and procedures for use in Maternal and Child Hygiene programs by the local health departments and by other divisions. These are worked out with advice and suggestion from other divisions, and are not adopted until reviewed by them, but it is a special responsibility of Maternal and Child Hy-

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giene to be the clearing house for all Maternal and Child Hygiene policies. On occasions, as in the recent development of immunization policies in which Local Health Administration, Communicable Diseases, Maternal and Child Hygiene and the Division of Laboratories have overlapping interests, by mutual agreement, the Division of Communicable Diseases became the spokesman for all divisions, thereby representing the department. Only by recognizing the principle of teamwork can we avoid establishment by various divisions of different policies for the same programs.

Except for rare situations, policies and procedures serve as a guide, not a mandate, to local health departments.

2) Collection of statistical and other information and evaluation of Maternal and Child Health needs and facilities in the State, or in selected areas of the State.

3) Consultation service through the Division of Local Health Administration by specialists in the fields of Maternal and Child Hygiene, nutrition, public medical care programs, social hygiene, etc. to local health departments and other divisions.

4) Direct service by loan for a day or week or month of Division personnel to Local Health Departments, such as the service of nutritionists, or maternity hospital consultants, etc. In new programs, e.g. for Maternity and Infant Care, direct service may be administered by the Division until such time as it is practicable to move it out to the local health department.

5) Handling Children's Bureau title V allotment to the State. This involves cooperation with other divisions, such as Dentistry, Public Health Nursing, Local Health Administration, etc. all of whose needs are in part met from Children's Bureau funds.

6) Development and maintainance of relationships with State level medical, hospital, and lay groups to the end that there can be achieved, in closest harmony, optimum Maternal and Child Health benefits in this State.

To promote this objective, a medical advisory committee consisting of 10 widely known and representative physicians was appointed last July. All major divisional programs, and all new or radical changes are first discussed by this committee, and except in emergencies the division would not act without previous committee approval. Another committee, which is freely consulted and which has an active part in divisional thinking is the Maternal Welfare Committee of the State Medical Society, four members of which are on the advisory committee. Frequently, the State Council is also asked for its approval of new or changed programs before they are developed. I believe it is no exaggeration to say that there is reciprocal confidence between these groups and the State Department. All of these medical groups have interlocking personnel.

Likewise, the important matters pertaining to the hospital participation and relationships are discussed with the government relations committee of the Illinois Hospital Association.

Finally, there is a large committee consisting of physicians and other prominent citizens. This committee was appointed by Governor Green, and although it has not yet actively participated in Divisional programs, that is largely because the EMIC Program has overshadowed other activities until just recently.

Probably there should be a small committee of 5 local health officers to act in an advisory capacity to the Division in Maternal and Child Health. Up to the present time, the flow has been from Maternal and Child Hygiene out, that is, what there has been, and such a committee might advantageously channel ideas from local health department to Maternal and Child Hygiene.

It is thus obvious that the Division of Maternal and Child Hygiene is a correlating and coordinating agency.

Different committees do not always arrive at the same conclusions. We have had that experience. It is then necessary to bring them together, and, as a general rule, a decision satisfactory to all concerned can be worked out. If not, it is probably more effective in the long run and wiser, to allow time for reconsideration than to thrust ahead; wiser, not because one fears opposition or criticism but because a plan which can be actively supported by all interested groups is almost bound to be sound and certainly has a good chance of success. You can count on something worth while coming out of a meeting of minds, even though it may be somewhat delayed, and not what you originally anticipated.

We have taken time to describe these basic principles of divsional policy because there has been no such statement in recent years, and understanding is a prerequisite against which to silhouette the following outline of present and planned divisional work. It is difficult if not impossible to classify such work under mutually exclusive headings. For example, the premature centers could be discussed under infant hygiene, hospital programs, or medical care programs. Therefore, no attempt is made in this paper to set up classifications. May I emphasize that each of the following subjects is only briefly outlined in this paper — each could easily use a full period in itself.

The Maternal Program. Statistics reveal that the maternal mortality rates for the State have shown progressive improvement over a period of many years. Nevertheless, the rates in Chicago are considerably below those for the rest of the State and it behooves us to emphasize methods to reduce the rates still further, especially downstate. The following programs will assist in reducing maternal morbidity and mortality.

1) The Maternity Hospital Law in January 1940 placed the responsibility for licensing, inspection and regulation of maternity hospitals, lying-in homes, or other places, public or private, for the confinement of women, in the State Department of Public Health. Since that time, all maternity hospitals have been visited, some frequently, by specially trained hospital consultant nurses and obstetricians from the Division, and, on the basis of their recommendations, a great many improvements have been made in nursing techniques and hospital plan arrangement and equipment. The nurses act as teachers and spend several days in a hospital demonstrating approved nursing techniques for the nursery, the formula room, and the care of post partum patients. As is to be expected, there has been some interruption because of the war in the plans of many hospitals to make building changes and equipment additions.

Each hospital renders a monthly statistical report, which is carefully studied and tabulated by the Division. These monthly reports are combined into an annual report. That for 1943 was recently completed and each hospital received its own report, as well as average figures for hospitals of similar size, and for all hospitals in the State. This report can and should serve as the basis for study by each hospital staff. For example, the hospital with the highest mortality rate (about 6 times that for the State as a whole) also had the highest Caesarean rate (about 3½ x that for the State as a whole). This does not necessarily mean there is a relationship but it does indicate the need for study by the hospital staff. Likewise, the transfusion rate in hospitals under 50 beds was too low to tabulate and as hospitals of greater size are tabulated a straight line upward graph results. This is worthy of study, and many other leads can also be obtained from these reports.

2) Prenatal clinics — There are only a few in the State, and they serve two purposes — first, to give service to a needy group or to a group in areas where other medical service is inadequate, and second, to focus public and medical attention on the value of adequate prenatal and other maternal care. The percent of patients receiving care in such clinics in Illinois is very small. I am not aware of any studies which are sufficiently conclusive to be the basis for determining the number and distribution of clinics which Illinois needs. There is a belief in some quarters that more clinic facilities are urgently needed for the negro populations of some downstate areas. This is being studied.

3) Prenatal classes for expectant mothers (and fathers) — Physicians everywhere, including Illinois, have been very slow in demanding this educational service from their local health departments. Those health officers in Illinois who have attempted to interest physicians in such classes for private patients have had almost no success. This is a matter with which each health officer, or county maternal welfare chairman, or other interested physician, should become thoroughly acquainted, and should place in the laps of the local societies for consideration. There are reports in the literature which indicate a noticeable reduction in morbidity and mortality among mothers attending such classes, and a purely educational effort such as this, is something that every doctor could support. Success depends on the interest of the physician. He can make or break such classes merely by the opinion he expresses to his patients.

4) Public Health Nursing visits to maternity

cases in the prenatal and postnatal period.

A physician who has never had the assistance of a competent nurse or technician in his office gets along quite well, not realizing what he is missing. In the same way, perhaps 90-95% of physicians in Illinois are "getting along" without the benefit of visits by public health nurses to their maternity patients, and yet, in most of Illinois, doctors and their patients could have this service which is in every way advantageous to the doctor if his relationship and the relationship of his society with the local health department are sound. In ten Illinois counties, such visits are common and physicians have actively objected to removal of this service. In effect, it provides the doctor with his own home nursing service, supervised by him, working under his direction, and reporting back to him.

Health officers and public health nurses should be aware of the two objections usually raised by physicians, 1) that the nurse shows favoritism towards certain physicians, and (2) that she may not use only those standing orders which have been approved by the local physicians. These objections are usually based on misunderstanding and can be ameliorated.

5) *Review of maternal deaths by hospital staff* — In 1943, 87.6% of all Illinois deliveries were in hospitals. There were 295 maternal deaths, (provisional) Every death should be critically reviewed by the hospital staff, or by its committee. The mere study of such deaths can be expected to result in lower morbidity and mortality rates. Many Illinois hospitals now do this, and it should be a priority program with every county society and hospital.

6) *Refresher courses in obstetrics and pediatrics* — An effort will be made through the teaching staffs in the Chicago area to provide another series of these courses. They may be shortened to one week as a war measure, and might well be attended especially by physicians in counties which have had unexplained high morbidity and mortality rates in recent years. Perhaps there will be an opportunity this year to include an hour or two round table discussions on the use of public health nursing, home delivery nursing service which is important in a few counties, prenatal classes, and the importance of study by physicians locally of all maternal and infant deaths.

7) The State Department of Public Health of Illinois has sponsored a hospital program for the collection of blood, processing and distributing it to hospitals as serum or plasma at almost no cost to the hospital or patient. The plan has been endorsed by the medical advisory committee and by the council and is expected to receive approval of the Hospital Committee at an early meeting. It is high on Dr. Cross's priority programs at this time and will be actively promoted from now on.

These then are some major programs at this time designed to reduce the hazards to maternity in Illinois. Others are contemplated but not yet formulated.

The Infant Hygiene Program. — What has been said about maternal hygiene in many instances also applies to Infant Hygiene. In addition, there is a program for breast milk, and another for premature care, that deserve description.

The Breast Milk program — At the last general session of the Illinois legislature, $20,000 was appropriated with which to provide breast milk for infants who need it and cannot obtain it from its normal source. The policies for this program have been formulated in detail and we are now awaiting the delivery of priority equipment. As far as I can determine, no other State has attempted a statewide program of this kind and some pioneering will have to be done. It is estimated that about 150,000 cc. of milk from outside sources would be needed in downstate Illinois. This progam will be started on a modest scale, perhaps in July, but as planned, is capable of expansion if funds become available, if donors can be obtained, and if doctors wish to use breast milk. As now organized, it will be a local health department function, with the milk the property of the State.

Illinois now has two premature centers in operation — one in Peoria, and the other in Springfield. Perhaps 40% of infant deaths are complicated by if not attributable to prematurity. Many of these infant deaths may be prevented by the proper use of heat, breast milk, oxygen, and the prevention of infection. The plan provides for hospitalization in specially equipped and prepared hospital premature centers without cost to the family on the recommendation of the physician. Nurses in attend-

ance at the premature stations are given special training at State expense, and a consultant pediatrician is retained at a monthly honorarium to consult with attending physicians or to furnish care if the attending physician so desires.

It is proposed to institute another center in Moline in the near future. Centers cover as much territory as is safe for transportation of the premature.

It may be that the future will see the development of feeder hospitals to these highly specialized centers, somewhat as has already happened in the field of x-ray therapy. Premature care is an expensive service if given on a small scale.

The Pre-school Group. — This, the neglected age group from a public health program point of view, and difficult to work with because of its diffusion and lack of organization, has not received special study by the Division recently. Even those pre-school age activities of long standing have suffered, and sometimes collapsed in these war years. Nevertheless, this group has important problems and deserves much better understanding and planning than it now receives.

School Hygiene. — The past year witnessed what may be the most important development in school health in Illinois in all its history. Through the efforts of the Directors of three State Departments, Public Health, Public Instruction, and Registration and Education, under the direction of Claire Turner and statewide committees, there has been developed a joint statement of school health policies. You will learn much about this in the near future. Suffice it today to say that the Division of Maternal and Child Hygiene will formulate its school hygiene program in accordance with the joint report which will be released soon.

Nutrition — For several years, the Division has employed four full time nutritionists who have spent one or two months at a time as members of a local health department. Except for Cook County, no local health department now has a full time nutritionist. Beginning in September, two counties will have nutritionists assigned to them for 4 months each, and another two counties will have the same service the second half of the school year. At the same time, service for a month or so each in several counties will be continued. Two or more nutritionists will be added to the budget for the next fiscal year and it is hoped that before long a few of the larger county health departments will have full time year round service by a nutritionist permanently attached to the local health department.

The division service is closely coordinated with the work of the statewide committee on nutrition which represents all active groups.

Medical Social Service — The Will County Health Department and the Peoria Health Department are the only two Illinois health departments so far as I know which have medical social service workers. The Division now has a medical social service consultant. Her job is to assist in the development of policies which may help local health departments and private physicians to bridge the gap which now prevents use by patients of services available from health and welfare agencies. This promises to be a development of major significance, and progress will be reported at a later date.

Emergency Maternity and Infant Care. — This is a wartime public medical care program which will have served at least 21,000 patients in Illinois by July 1, 1944. Approximately $2,000,000 will have been authorized and the fact that it has been such a big program explains the temporary lack of emphasis in other Maternal and Child Health developments this last year. This program in Illinois has been reported in greater detail elsewhere.

Social Hygiene. — A very small beginning was made this year towards the development of this program at the local level. Three health officers expressed an interest in sending representatives to a short demonstration and workshop which the Division will conduct later this month. This program is not to be confused with Venereal Disease control. It is essentially a teen age activity of an educational nature designed to assist girls and boys to make desirable adjustments to meet the transition from adolescense to early maturity.

SUMMARY

A general statement is given concerning the methods used by the Division in maternal and child hygiene programs.

Present activities are discussed briefly and fields of future emphasis are indicated.

Physical Medicine Abstracts

John S. Coulter, M.D.

THE FUNCTION OF THE PATELLA AND *THE EFFECTS OF ITS EXCISION*

Herbert Haxton, B.Sc., Ch.M., F.R.C.S.,
Oxford, England
In SURGERY, GYNECOLOGY AND OBSTETRICS, 80;4;395
April, 1945

1. The patella is a sesamoid bone developed in and lying in the line of the extensor tendon of the knee.

2. *Its phylogenetic and ontogenetic development* indicate it probably has a function.

3. Experimental work shows that the patella improves the efficiency of knee extension in the more important extended positions of the knee *joint by holding the patellar tendon away from* the axis and thereby increasing the extending *moment of the quadriceps pull.*

4. Clinical investigations confirm the experimental findings.

5. Patellectomy is justifiable in patellofemoral osteoarthritis.

ACTIVE MOTION BY MEANS OF OCCUPATIONAL THERAPY IN THE TREATMENT OF FRACTURES

Lester Breidenbach, M.D., and Elizabeth Jamison, O.T.,
New York, N. Y.
In SURGERY, GYNECOLOGY AND OBSTETRICS, 80;4;365
April, 1945

1. Occupational functional therapy is a distinct help in the treatment of injuries to the extremities. *It rehabilitates the patient in the* shortest possible time.

2. *By means of the arthrometer and proper* charting, progress becomes an accurate measure*ment* rather than a guess.

3. Treatment is continuous and is carried out at the occupational clinic and at home.

4. Return to normal function is shortened in fractures of the extremities.

5. An accurate chart of all joint ranges is *appended.*

CALCIFICATION OF THE TENDON CUFF OF THE SHOULDER

M. Beckett Howorth, M.D., Sc.D. (Med.), F.A.C.S.,
New York, N. Y.
In SURGERY, GYNECOLOGY AND OBSTETRICS, 80;4;343
April, 1945

Pain and spasm may be relieved in some cases, especially the acute ones of short duration, by any one of several treatments.

Heat, in the form of a lamp, hot water bag, electric pad, or hot packs, may provide some *relief. Short or long wave diathermy may re*lieve some shoulders, and may even be followed *by absorption of the calcareous material in the* early acute ones. However, an acute shoulder, with inflammation of the bursa, or tension in the tendon, is often made worse by heat.

Cold is usually more comforting than heat, *especially in the very acute cases. Ice packs may* be used, but the ethyl chloride spray, as reported *by Kraus, is usually more effective.*

Massage of the bursal region is likely to increase the pain in most cases, though gentle massage of the adjacent muscles may be used to maintain muscle tone. Manipulation or stretch*ing usually increases pain and spasm, and often* does more harm than good.

Exercises are of great value, and are the most important of the various physical therapeutic measures.

The pendulum exercises are the simplest,

easiest, and least painful; they should be done with the arm in flexion and hanging loosely, i.e., with the trunk flexed, or with the subject lying prone upon a table with the arm over the side.

Aspiration, irrigation, or puncture of the calcified area may give relief, chiefly by the release of tension.

A QUICK AND SIMPLE TREATMENT OF LOW BACK PAIN BASED ON A NEW CONCEPTION OF ITS GENESIS

Aladar Farkas, M.D., and George W. Easley, M.D., Williamson, W. Va.

In THE WEST VIRGINIA MEDICAL JOURNAL, 41;4;107
April, 1945

The routine of the treatment in more than 60 cases was as follows: After the clinical and x-ray examination the patients were placed in beds whose front legs were raised 12 to 20 inches. Beneath the mattress a board was placed. The patients retained a small cushion for their heads if necessary and were kept in bed day and night. Daily for twenty minutes a heat cradle was applied. The duration of the treatment varied from seven to fourteen days, but in no case exceeded a fortnight.

The pathogenesis of the low back complex (lumbago, sciatica, protruded disc) is explained on the ground of a primary lumbar kyphosis, a straight lumbar spine preceding all signs and symptoms. The reverse of lumbar lordosis is caused by stooping and sitting occupations. Among the signs accompanying the disappearance of lumbar lordosis attention is called to the spasm of the lateral abdominal muscles and to the lumbar shift of the dorsal kyphosis. In more than 60 cases complete relief from the local and nervous symptoms could be obtained by putting the patient in a bed, the front legs of which were elevated from 12 to 20 inches for from seven to fourteen days. Recurrences were rare and easily handled by the same method.

CANCEL PHYSICAL MEDICINE MEETING

The annual scientific and clinical session for 1945 of the American Congress of Physical Medicine has been cancelled. This meeting was to have been held in New York City, September 5 to 8, 1945.

OSTEOARTHRITIS OF THE SPINE

Ernest Fletcher, M.A., M.D., M.R.C.P.
Physician, Queen Mary's Hospital, Stratford, London;
Physician, British Red Cross Society's Clinic for *Rheumatism, London;*
Physician (with Physical Medicine) Royal Free *Hospital, London;*
Physician in Charge, Medical Division, E.M.S.

In THE BRITISH JOURNAL OF PHYSICAL MEDICINE AND INDUSTRIAL HYGIENE, 8;2;51
March-April, 1945

The diagnosis of osteoarthritis of the spine is made fairly frequently, but it is not by any means the commonest of the medical locomotor disorders. In 1,500 carefully recorded cases of chronic rheumatism it occurred 84 times, 37 times in males and 47 times in females. This compares with 377 cases of infective arthritis in the same series, which also included 90 cases of ankylosing spondylitis. The average age at the time of onset was 55 years. The average duration of symptoms at the time of diagnosis was 23.6 months.

Anatomical evidence has been produced to show that osteophytic formation occurs in the short intervertebral ligaments and that this lesion has a certain incidence in the spine. Osteoarthritis of the apophyseal joints and its incidence is also discussed.

Clinical evidence is adduced which suggests that polyspondylitis does produce symptoms, although some workers maintain that it does not (Gordon). The symptoms of osteoarthritis of the spine are described, together with the physical signs. An attempt is made to correlate the clinical and anatomical findings. The radiographical view-point is considered and its difficulties are mentioned.

No attempt is made to assess treatment, but it is quite possible that separation of the two main forms of osteoarthritis of the spine may lead to modifications in treatment.

TREATMENT OF FRACTURES OF THE TIBIAL CONDYLES

Robert A. Knight, M.D., Memphis, Tennessee

In SOUTHERN MEDICAL JOURNAL, 38;4;254
April, 1945

Postoperative Care and Results. — Early protected motion without weight bearing has been found to be the most satisfactory method of restoring function. Immediate postoperative immobilization consists of a long leg cast with a

pelvic band with the knee in 15 degrees of flexion. In two or three weeks, after the wound has healed, the cast is removed and the extremity is suspended in balanced traction for active and passive motion. Daily physical therapy is given, the patient being instructed in quadriceps exercises, and care is taken to prevent forcible flexion of the knee. At the end of five to six weeks, the patient is allowed up without weight bearing, wearing a long leg control dial knee brace.

REFRIGERATION ANESTHESIA IN SURGICAL PROCEDURES

Damon B. Pfeiffer, M.D., and F. M. Simmons Patterson, M.D., Abington, Pa.

In THE PENNSYLVANIA MEDICAL JOURNAL, 48;4;352

January, 1945

The use of reduced temperatures has long been known, but it was not until about twelve years ago that refrigeration was used for anesthesia. Dr. Frederick M. Allen has been an outstanding pioneer in advocating refrigeration in various procedures. As a result of experimental work that he performed in an effort to find improved means of handling cases of diabetic gangrene, we have learned the advantages and limitations of refrigeration anesthesia. Its principle is best explained in his own words: "Basically, refrigeration anesthesia reduces metabolism to a point which is just compatible with tissue viability. Thus, in a leg with advanced arteriosclerosis, metabolism can be reduced to a level where the existing circulation is adequate for the needs of the tissues . . . Nerve impulses are abolished. Also, one of the fundamental properties of protoplasm, which is irritability, is arrested by cold. Therefore, this method differs fundamentally from all previously known anesthetics in producing anesthesia not only of nerves but of protoplasm . . . Under refrigeration, shock is nonexistent, and the duration and degree of tissue trauma immaterial.

SUMMARY

1. Refrigeration is the chilling, not the freezing, of tissues.

2. Refrigeration anesthesia is indicated in aged, poor-risk diabetics with gangrene of an extremity that requires amputation. Nine limb amputations under ice in diabetics are reported with one death.

3. In Individuals with gangrene of an extremity due to arteriosclerosis or peripheral vascular disease, and who are bad risks, refrigeration is the anesthetic of choice. Three successful cases are reported.

4. The technic of limb amputations under ice is described, and the advantages of this procedure are listed.

5. Refrigeration anesthesia is often a life-saving procedure when gangrene, infection, toxicity, and possibly septicemia exist. The patient may be thus improved to the point where conservative or radical surgery is rendered possible.

6. Refrigeration of badly crushed extremities retards shock and bacterial growth and permits the patient to be improved generally by transfusions, etc. Amputation with no further anesthetic agent may then be safely performed.

7. Refrigeration offers many advantages in the treatment of burns.

8. In fresh embolism and thrombosis, refrigeration of the limb extends the limits for successful embolectomy. It also gives marked symptomatic relief, and makes possible later radical surgery. Two successful cases are reported.

9. Severe cases of frost-bite often respond miraculously to the application of cold.

10. The value of refrigeration has been extended to the field of skin grafting.

11. Sixteen cases of limb amputations were performed under ice with only one death. All patients were exceedingly poor risks.

Industrial Health

Committee On Industrial Health — Frederick W. Slobe, Chm., 2024 South Western Ave., Chicago, Frank P. Hammond, H. A. Vonachen, R. I. Barickman, C. O. Sappington, Milton H. Kronenberg.

CAUSALGIA

Just as it occurred in the last war, causalgia is a rather frequent manifestation following injuries in the present war and, no doubt, will become increasingly more frequent in the future as the casualties increase in number and as more time elapses.

The following article by Captain Francis D. Threadgill illustrates some interesting features of the diagnosis:

RESIDUALS OF WAR WOUNDS OF THE EXTREMITIES*

CAPTAIN FRANCIS D. THREADGILL
MEDICAL CORPS, ARMY OF THE UNITED STATES

Causalgia, an annoying and frequently disabling sequela of wounds near nerve pathways, is being encountered more and more often in wounds sustained during the fighting in Italy. This phenomenon is a delayed complication, coming after such wounds have fully healed, and is well known to all war surgeons. It was first described by S. Weir Mitchell,[1] and his paper has remained a classic since the Civil War. It is apparent that its usual appearance some time after the original injury accounts for the cases coming to attention at this time in this theater, where fighting has now been going on for approximately seven months.

Wounds near the larger nerves, with no immediate evidence of injury to the nerve, are those in which this vaguely understood condition may develop. The patients do not experience sensory disturbance until some weeks after injury and almost invariably not until healing of the wound has occurred. Causalgia may affect any area of the body, but the usual areas involved are the arms, forearms and leg, owing to the fact that wounds involving them are seldom fatal and that great nerves and vessels in these areas are more subject to injury than elsewhere.

Burning pain of an extremity with aching of muscles and loss of epicritic sensation over the course of one or more peripheral nerves are the characteristics of the disease early in its course. Loss of the sensation of light touch is its most prominent diagnostic feature, as it is very definite; whereas in the hysterical patient and the malingerer sensation is usually greatly amplified or completely absent. This one sign has been found of great value, and its presence will almost certainly assure a satisfactory response to block of the sympathetic nerve supply of the area.

This paper will deal only with cases of patients in whom the condition is in an early stage and who have shown no vascular, gross muscular or osseous changes. The statements and opinions made are drawn from a study of such cases. It is in such cases that treatment is satisfactory, for later in the course of the disease irreparable changes develop, varying from trophic cutaneous changes to extensive absorption of bone. Sensation in the advanced stage is usually hypercritical, causing the patient to go to such extremes as to wrap the involved part in urine-soaked rags, as wet applications are found to decrease pain. Classic cases of this type are described by Mitchell.

Examination of these patients reveals, depending on the duration and severity of the process, some atrophy of the affected extremity and usually the cutaneous changes of disuse. No impairment of motor function is present. The sensory changes are characteristic and diagnostic of the disease. One finds paresthesia exactly over the peripheral distribution of one or more nerves, with loss of sensation to light touch. Pressure sensation is not lost, and the response to heat and cold is usually exaggerated. Muscular ache involves the great flexors and extensors of the member and is not well localized. All symptoms are increased with use of the part, and the patient's chief complaint is his fear of using the extremity because of his knowledge that his symptoms will be greatly increased.

It is understandable that a man wounded in combat may wish to defer his return to the front. The myriad complaints that develop during the stay of such soldiers in the hospital make the medical officer prone to turn a deaf ear all too easily to one whose wound has no ap-

*WAR MEDICINE — Vol. 6 No. 5 Nov. 1944. Quoted in part only, not including case reports and summary which are shown in the original article.

1. Mitchell, S. W., cited by Davis, L.: The Principles of Neurological Surgery, ed. 2, Philadelphia, Lea & Febiger, 1942.

parent possibility of producing nerve damage. The patients I have seen have all been returned to duty after an uneventful recovery of their primary wounds. All of them stated that their "causalgic" symptoms did not appear till days or weeks after the primary injury.

The difficulty of diagnosis is great, as malingering and the neuroses are easy to confuse with causalgia. It is important, however, that the entities be separated, for treatment of causalgia is both simple and generally satisfactory and permanent disability may be avoided if therapy is exhibited shortly after or while the process is developing. Recently, Spurling and Scoville[2] have shown that herniated cervical intervertebral discs produce a type of pain that may be confused with causalgia. The constant involvement of the neck, however, should serve to rule out this condition, together with such other conditions as cervical rib, or scalene, syndrome.

The pathologic process responsible for this condition is an imbalance of association of the central and autonomic nerve supply. That such is the case may be suspected on consideration that the description of the disease is that of an essential atavism. Anatomically, one may postulate that a lesion has interrupted the nerve pathways of the autonomic system about vessels to and from the part, causing a dyssynergism with loss of correlation of the two normal channels of sensation. It is probable that one is dealing here with an overactive autonomic supply from the affected area, which has lost modifying fibers injured by trauma higher up and some distance away from the nerve itself. It is known[3] that peripheral nerves carry both cerebrospinal and autonomic tracks; with fibers entering all along the course of the nerves, loss of parts of integrating autonomic factors will explain the process, much as motion is regulated by the cerebellum. Following a block of the sympathetic nerve supply of the area the complete relief of pain secured gives an insight into the picture, as apparently loss of the sympathetic return of the part allows the central nervous system alone to assume and integrate normal sensation.

The immediate relief of pain secured in causalgia by the simple procedure of block of the lumbar or cervicodorsal portion of the sympathetic trunk is gratifying to all concerned. It is a truly dramatic proof of diagnosis in a field fraught with hysterical conversion and malingering among patients seldom seen by the neurologist until irreversible changes have occurred.

It is probable that some patients with causalgia will recover spontaneously, and it is obvious that some with definite nerve injury may show causalgic symptoms in addition to more positive evidence of damage. Of the patients whose cases were studied, one who became clinically worse after the procedure was later shown to be a definite psychopath. Another man entering the hospital with severe pain and aching of the arm and forearm was completely relieved after two injections. The third, who showed no response to the procedure, has been found to have definite ulnar damage and is to have neurolysis.

2. Spurling, R. G., and Scoville, W. B.: Lateral Rupture of the Cervical Intervertebral Discs, Surg., Gynec. & Obst. 78:350-358 (April) 1944.

3. Ranson, S. W.: The Anatomy of the Nervous System, ed. 5, Philadelphia, W. B. Saunders Company, 1935.

TRAUMATIC SURGERY AND NEURO-PSYCHIATRY

In "War Medicine" for October, 1944, some interesting abstracts appeared from which the following selections have been chosen:

A Physiologic Analysis of the Nature and of the Treatment of Burns. W. W. L. Glenn, Ann. Surg. 119:801 (June) 1944.

According to Glenn, the local treatment of burns necessitates the consideration of three fundamental lesions: injury to the epithelium; injury to the vascular bed, particularly the capillaries in the burned area, and injury to the surrounding and supporting tissues. It is believed that the underlying cause of the lack of uniformity in the treatment of burns has been failure to appreciate this triad of lesions and the physiologic changes brought about by them.

After discussing these lesions, the author reviews the therapeutic requirements of burns, enumerating them as follows: a protective noninjurious covering, control of capillary leakage and immobilizatoin of the part.

The following are the requirements of the protective covering: 1. The dressing must do no further damage to the burned surface. 2. The covering must afford protection from contamination. 3. The protective covering should require infrequent change.

In connection with the control of capillary leakage, the author evaluates pressure dressings and nondistensible dressings and then stresses the importance of immobilization. Finally he dicusses the clinical use of closed plaster dressings. There is no harm from this treatment. There were no instances of injured circulation. The prompt return of function of a part immobilized in plaster over prolonged periods has been one of the most gratifying features of this treatment. Not the least important is the comfort obtained by this treatment. The plaster dressing is easy to apply to burns of the extremity. The slight degree of after-care of the burned area is one of the chief advantages. Pain or discomfort in an encased extremity occurring twenty-four to thirty-six hours after application of the dressing was relieved by elevation of the part.

The following directions are given for using closed plaster dressings in the treatment of burns: after minimal cleaning and débridement and without breaking blisters, two layers of sterile gauze are laid over the burned surface extending above the area to be covered by plaster. If fingers are involved they are enclosed separately in the gauze. A thin sheet of rolled plaster bandage is then applied to the part without pressure, extending over the end of the extremity and 2 to 4 inches (5 to 10 cm.) above the burn. In mild burns the

encasement is removed in seven to fourteen days. In more severe burns it may be left in place for as long as four weeks. If the burn is incompletely healed or the epithelium is unusually thin, another encasement should be immediately reapplied. Grafting may be started as soon as the slough separates.

Numbness beneath the plaster is an indication for prompt removal. No cases of this have yet been observed, and with correct application none should develop.

Infection beneath the encasement is usually well localized and as a rule does not warrant removal of the encasement. Sulfonamide compounds on the burned surface are of questionable value.

USE OF A SATURATED IODOFORM-BENZOIN SOLUTION TO COUNTERACT THE ODOR OF PLASTER-ENCASED WAR WOUNDS. C. M. Silver and H. W. Rusbridge, Mil. Surgeon 95:233 (Sept.) 1944.

Silver and Rusbridge recommend the use of a saturated iodoform-compound tincture of benzoin solution to counteract the foul smell encountered in plaster-encased war wounds.

At a station hospital functioning overseas a saturated solution of iodoform in compound tincture of benzoin was painted daily over the discolored, malodorous portion of the cast. The resulting odor is relatively agreeable, and the solution is absorbed readily by the plaster surface.

The authors have employed the iodoform-tincture of benzoin solution in more than 100 cases of compound war wounds during periods ranging up to seven weeks without change of the original plaster of Paris casing.

"RING" SEQUESTRA AS A COMPLICATION OF FIXED SKELETAL TRACTION. C. P. Truog, Am. J. Roentgenol. 52:64 (July) 1944.

Truog points out that a complication which occurs not uncommonly with skeletal traction is the formation of "ring" sequestra. The author has observed 7 instances of such sequestra at an orthopedic clinic in the past two years. Six of the patients had been treated for fracture with pins incorporated in plaster casts which extended from the toes to above the knees with about 15 degrees flexion at the knees. The patients then became ambulatory and were seen in the outpatient clinic. Five of these 6 had pins inserted through the upper tibial fragment and the calcaneus. One had a pin driven through the distal fragment as well as the proximal fragment. These 6 all had delayed union. The seventh patient was treated with the Kirschner wire extension. He had had a fracture of the femur and humerus as well as of the tibia and fibula. Nonunion occurred in both the femur and the tibia, necessitating bone grafts.

The author gives detailed reports of the 7 cases. He stresses that roentgenologists should give special attention to such cases, as the diagnosis of ring sequestrum will depend entirely on the roentgen examination. It is important to make the diagnosis as soon as possible, so that the skeletal traction may be removed.

Constant traction under these conditions may lead to extensive damage to bones or to migration of the pin out of the bone into soft tissues, epiphyses or joints. The cause is probably pressure necrosis plus a low grade infection.

BONE-DRILLING IN DELAYED UNION OF FRACTURES. M. E. Pusitz and E. V. Davis, J. Bone & Joint Surg. 26:560 (July) 1944.

Pusitz and Davis do not offer a new method of bone-drilling in delayed nonunion but emphasize a worth while procedure that is often neglected in the treatment of fractures.

This report is concerned with the cases of 25 consecutive patients treated at a military hospital.

Bone drilling is not a method of choice in the treatment of definite nonunion. Rather, it is intended for the treatment of delayed union. It is, of course, difficult to differentiate between delayed union and nonunion. It involves not only a question of time but also a question of the roentgenographic observations. A delayed union may be still present at the end of ten months, whereas nonunion may be present at the end of ten weeks.

There are three essential types of nonunion, namely, (1) typical pseudarthrosis with sclerosis of the ends of the fragments, (2) fibrous union with osteoporosis of the fragments, and (3) fibrous union with atrophy of disuse.

In delayed union, although there may be no discernible callus, there is no sclerosis of the ends of the fragments. If there is absolutely no evidence of callus formation at the end of four to six months, delayed union may be considered to be present.

A large number, probably the majority, of delayed unions will ultimately unite if immobilization is adequate and continued long enough according to the functional method of immobilization of Böhler. However, this may take eight months or eighteen months, and certainly a proportion of these delayed unions will resolve themselves into nonunions. If a method is available which is simple, carries with it little potential danger and yet gives a large percentage of success, it should be practiced.

Delayed union is the primary indication for bone drilling. It should be performed within a four to six month period.

Open operation should be practiced. The incision should be as short as is consistent with complete exposure of the fracture. The dissection should be minimal, in order not to interfere with the local circulation. The stripping of the periosteum from the bone should also be minimal, for similar reasons. A series of thirty to fifty holes are then drilled in the following manner: Starting above the fracture site, a dozen or more drill holes are made across the line of fracture, but diverge as they cross the fracture site. In a similar way, drill holes are made with the point of convergence below the fracture site.

After the bone has been properly drilled, simple closure is effected. The part is then properly im-

mobilized, as after a fresh fracture, and with as much care. A well fitting, non-padded plaster of Paris cast is applied, to which a walking caliper is added after a week or ten days. The functional method of treatment, as described by Böhler, can then be adopted with profitable result. In the upper extremity, the cast or Roger-Anderson fixation may be used.

The authors also discuss subcutaneous bone drilling and then review 25 consecutive cases in which bone drilling was done.

In all cases except one there was bony union, both clinically and roentgenographically. The average time required for the development of union after drilling was eight weeks. The shortest period was three weeks (after fracture of a clavicle), and the longest was five months. The patients were up and around in a walking cast a week or ten days after operation. There were no postoperative infections.

PSYCHIATRY IN THE BRITISH ARMY. J. R. Rees, Am. J. Psychiat. 101:20 (July) 1944.

In war not only does the group matter more than the individual, but the lesser and more preventable diseases are vastly more important than the clinically more interesting but much rarer disorders. Psychosis is much less frequent and much less important from the point of view of winning the war than neurosis and the associated problems of lowered morale. In consequence, much emphasis has been laid on what might be called social psychiatry and especially on the preventive mechanisms, of which selection is chief.

Selection, founded on a thorough analysis of all the jobs to be done in the Army and matching of men to those jobs on a basis of their quality, intelligence and specific aptitudes, has been an undoubted success. Not only has far greater efficiency resulted, but training has been better, sickness and delinquency have been reduced and morale has benefited.

In this war there is practically no one who is not fully employed either in the services or in industry, and consequently the utilization of man power is a vital matter. The Army has been unable to reject all inferior and inadequate human material and to keep only that which is best. Both backward and neurotic men have to be used wherever possible, and in consequence much thought and effort have been given to devising the best methods of management of these particular groups. One example may be given — that of the very dull men, with a mental age from 8 to 10, whom it is diffcult to employ in any full combatant status. The worst soldiers turn out to be the best laborers when properly grouped together under good officers and noncommissioned officers who understand them. Neurotic men who have a long history of emotional and psychosomatic difficulties do good work when they are wisely placed with regard to occupation.

The results of the treatment of true battle neurosis, when it has arisen in the line, have been satisfactory. Between 30 and 50 per cent of men with such neuroses are got back to combatant duty with their units in four or five days. Sedation after abreaction with good rest for a day or two are sufficient to deal with many of these men, and few of them need to leave the combat area, since even though not immediately fit to go back into the line they can be employed in other tasks.

CURRENT TRENDS IN MILITARY NEUROPSYCHIATRY. M. J. Farrell and J. W. Appel, Am. J. Psychiat. 101:12 (July) 1944.

Farrell and Appel point out that one of the important lessons learned in the last war was that a considerable number of men who fulfilled the physical requirements for service were nevertheless noneffective as soldiers because of mental abnormalities. Men with psychoses, mental defects, severe psychoneuroses and psychopathic states were untrainable, untreatable, disturbing to morale and eventual expensive liabilities to the government. There developed what might be called "the era of diagnosis and disposal" in military neuropsychiatry. It was widely believed that psychiatric disorders did not develop in normal men, only in weaklings or in men with underlying emotional instability which could have been detected in advance.

The myth that only weaklings acquire psychiatric disturbances was exploded completely. It was found that in one campaign the incidence of psychiatric disturbances was higher among veteran combat troops than among fresh, green troops. Fatigue and other factors produced more psychoneuroses in this group than among fresh, untried troops. It became evident that any one could acquire a psychoneurosis under certain circumstances. The limitations of screening became obvious. If screening were to weed out any person who might develop a psychiatric disorder, it would be necessary to weed out every one.

Psychiatric screening can weed out only abnormal men. It cannot decrease the rate at which "normal" men break down. It runs the risk of eliminating men who, although having some defect of personality, nevertheless if properly handled can render valuable service in the Army.

The assumption that any man acquiring a psychiatric disorder was a weakling led to the policy of discharging anybody who was labeled with a psychiatric diagnosis. The wastage inherent in this policy became evident when it was demonstrated that if psychiatric disorders were regarded as medical emergencies and properly treated 60 to 80 per cent of the patients whose breakdowns occurred in combat recovered and returned successfully to full combat duty. Another unfavorable result of the policy soon became evident. Although true malingering was rare, the escape mechanism was prominent frequently close to the conscious level. The policy of discharging such men not only made the escape mechanism effective but encouraged its use. It constituted a reward for failure.

It became clear that in this war psychiatrists were going to have to do more than concern themselves with diagnosis and disposal. It was necessary to find out what was causing men to break down and then to attempt to eliminate those causes.

The rate of battle injuries is presumed to be an

index of intensity of combat, and it is shown to have a relationship with the rate of neuropsychiatric casualties. Furthermore, the percentage of neuropsychiatric casualties rises in direct proportion to the length of active combat duty.

This point is amplified by reports from psychiatrists emphasizing the role of exhaustion. Difficulty in sleeping under shell fire, in open foxholes and exposed to extremes of temperature, wet and mud, cold food and constant demands for physical exertion produce a state of physical and mental fatigue which is of paramount importance in precipitating these psychiatric breaks. Rest, induced by sedation, appears to be the most important factor in their recovery.

A number of factors were important in causing psychiatric disorders. Personality structure was merely one of several. Fatigue, leadership, morale, discipline, job assignment, motivation, training, domestic difficulties — each of these might be as important as personality structure in any given case and in combination frequently more so.

Preventive measures have been taken by psychiastrists along three general lines: (1) educational, (2) motivational and (3) environmental.

A course of six lectures on mental health is given to all officers in the Army. These cover the principles of personal adjustment, personality structure, motivation, specific stress factors, signs and symptoms of breakdowns and measures to maintain mental health of the group. A similar course of three lectures is also given to all enlisted men. These cover the following subjects: personal adjustment problems, fear, resentment, bodily effect of emotions and a healthy viewpoint toward being in the service.

To attack the problem of motivation of military personnel, the Army set up an organization now known as the Morale Services Division. It has the mission of assisting the command in supplying troops with current news and information concerning the background and causes of the war.

The majority of the factors which determine the mental health of military personnel are functions of command. In other words, the main job of preventive psychiatry must be done by commanding officers of the line. The psychiatrist acts as adviser to the command. Collaborating with the personnel classification officer, he seeks to prevent many psychiatric disorders by bringing a medical viewpoint to bear in job assignment problems.

In respect to treatment, it is the present policy to regard every patient as salvageable until proved otherwise. A second policy is that every breakdown shall be regarded as a medical emergency. It is vital to start treatment immediately, while the disorder is still in the amorphous state, in order to prevent symptoms from becoming fixed. A third important principle is to attempt to keep psychiatric patients out of hospitals, since it is well recognized that hospitalization has the effect of exaggerating the concept of illness in the patient's mind.

It is generally recognized that the concept of physical health covers a wide range of conditions; mental health, on the other hand, has been regarded as being black or white. Either a man is insane or he is completely normal. The possibility has not been considered that there might be anything in between. Actually, of course, mental health, just as physical health, ranges all the way from bad to good. A man may have minor temporary mental ill health, just as he may have a head cold. Mental disorders may be acute or chronic, severe or mild.

Many laymen become frightened and resentful when a psychiatrist applies a medical term to conditions they were used to recognizing as a "case of the jitters" or "gone stale" or "nervousness." It is difficult for laymen to realize that when a "case of the jitters" is sufficiently serious to incapacitate a man or produce insomnia and indigestion a psychiatrist may call it psychoneurosis and yet not mean anything more serious than was meant by the layman who called it "the jitters."

IMPORTANT

Send changes of address to 30 N. Michigan Ave., Chicago 2, Illinois, enclosing label from a copy showing your old address. Changes received after the 1st of the month will not go into effect until the following month.

An equitable labor policy must be established for those found to be tuberculous if the control program for this disease is to have permanent success. It has been found that health committees of labor unions are sympathetic to this type of health activity if they are informed of the full implications of the presence of a communicable disease in a fellow worker. A sick worker is a liability to himself, his family and his union, not to mention the industry and the community. When these facts are presented in their true light, rarely has there been difficulty in obtaining full cooperation. Herman E. Hilleboe, M.D. and D.M. Gould, M.D., J.A.M.A., May, 1944.

News of the State

PERSONALS · COMING EVENTS · MARRIAGES · DEATHS

★ WAR SERVICE ACTIVITIES ★

ADAMS COUNTY

Lt. Comdr. Kent W. Barber, Quincy, is now located in the Naval Hospital at Memphis, Tennessee. He is in the Department of Surgery where he was assigned following his dismissal from the hospital at Oakland, California. He was confined in the hospital for a number of months, due to a severe injury to the sole of one of his feet. While not entirely recovered, Comdr. Barber is able to take care of a part of his surgical duties.

Lt. Comdr. Walter M. Whitaker, Quincy, is located in the Naval Hospital in the Marianas, in the South Pacific. He is in charge of the Medical Department.

Major Walter Stevenson, Jr., Quincy, is now located in Rheims, France, where he is doing Plastic Surgery in a General Hospital.

Capt. Harry Ryan, Quincy, is now in California, where he is convalescing from a serious tropical skin infection. Prior to his return to the United States, he was located in the South Pacific.

Major Frank T. Brenner, Jr., Quincy, is located in the occupied area of Germany and is in a hospital in the Surgical Division.

Major Rae Hoover, Quincy, is now located in the United States, where he is stationed in a hospital at Ft. Knox, Kentucky, in charge of the Division of Urology.

Col. John Davis, Quincy, is still in charge of a hospital ship which evacuates wounded from the European Theatre of Operations to the United States.

Lt. Col. Ray Mercer, Quincy, is located in Georgia in charge of a large prison camp hospital.

Dr. George Borden, formerly of Mendon, Illinois, is now a Captain and located in England. The last we heard from him, he was in charge of the whole blood bank for that area in which he was located.

CHAMPAIGN COUNTY

The Surgeon General has announced the promotion of James Eldon Blades of Sidney from Major to Lieutenant Colonel.

COOK COUNTY

Lt. Col. Ralph H. Fouser who has been commanding officer of the Camp Ellis hospital and chief of surgical service has been named commanding officer of the Camp Grant station hospital while the post begins to prepare for the processing of European veterans headed for the Pacific war zones.

Lt. Col. Robert D. Bickel, surgeon general liaison officer at the American Medical Association offices, has been presented with the legion of merit for "exceptionally meritorious service" as commanding officer of hospitals in India and in China. The presentation was made by Major General David McCoach, Jr. commanding general of the 6th service command.

Captain Patrick Parisi, formerly of Chicago Heights, was recently awarded the Bronze Star in Germany. The citation was in recognition of efficient surgical service for the 740th Tank Batallion.

Major Sylvan W. Simon, formerly of Chicago and now with the Air Service Command in Italy, was recently awarded the Bronze Star after he led his medical detachment in stamping out a civilian smallpox epidemic before it reached the thousands of combat airmen of the 15th Air Force who were on duty at nearby airfields. Dr. Simon graduated from Rush Medical College, Chicago, in 1926 and entered the service in October 1940.

The office of the Surgeon General announces the following promotions — from Lt. Col. to Colonel, Eugene Rhea Chapman, Chicago and from Major to Lt. Col., Felix Jansey of Riverside, Morton Joseph Mills, Arthur Karl Peterson, George William Stuppy, all of Chicago.

Lieut. Martin A. Dolan after having spent considerable time in the South Pacific has been on leave in Chicago with reassignment to Great Lakes Naval Training Station.

Major Clifford Sullivan recently spent a few days in Chicago from his assignment in Tucson, Arizona.

M. O. Bousfield, M.C., has been promoted from Lieut. Colonel to Colonel. Col. Bousfield is Commanding Officer Station Hospital No. 1, Fort Huachuca, Arizona.

Irving Blumenthal, M.C., has been promoted from First Lieutenant to Captain. Captain Blumenthal is in charge of a battalion aid station on Saipan.

Among the medical men with the Michael Reese Unit which accompanied American Soldiers on their invasion of Italy were Major Alfred E. Jones, Captain Alfred J. Platt and Captain Arthur H. Schoenwetter.

Captain William Saphir on a South Pacific Island recently finished a study on the tropical disease, filariasis, which will be published soon with the approval of the War Department.

P. M. Garramone, M.C., has been promoted from First Lieutenant to Captain. Captain Garramone is stationed at the Station Hospital, Savanna Ordnance Depot, Proving Ground, Illinois.

Captain Rex D. Hammond, son of Dr. Frank P. Hammond of Chicago, has been attached to the 76th Medical Battalion, forward echelon, of the United States Third Army, under General George S. Patton, during its entire operation from the time of landing on Normandy to the end of the European hostilities in the center of Germany. In addition to battle stars, Captain Hammond has recently been awarded the Bronze Star Medal, with a citation: "This medal is awarded to anyone especially distinguished for meritorious achievement in the Army or Navy in connection with military operations against an enemy of the United States." He has recently been assigned the task of medical administrator of the famous Buchenwald prison camp, which is still crowded with refugees, slave labor nationals and convalescent atrocity victims, where, he says, "the work is extremely interesting but the prevailing conditions are appalling."

DE KALB COUNTY

Major Bernard F. Howland, a former Sycamore surgeon, entered the army 27 months ago and has been serving overseas since February 1944. He was commanding officer of a surgical unit of General Patton's Third Army in Germany. On April 20 his unit was ambushed by Germans near the Czechoslovakian border and he was wounded in the left arm and captured. During the 18 days of imprisonment he received no medical attention and very little food. In a recent letter he states that infection set in in the wounded arm, but thanks to modern surgery applied after his liberation he is recovering and expects to be back soon to take up his practice in Sycamore.

The famed 27th Infanty Division's Public Relations Office has announced the promotion of Major John F. Eggers, from his former rank of Captain.

Major John F. Eggers is the commanding officer of the medical battalion Clearing Station of the famed 27th Infantry Division, commanded by Major General Geo. W. Griner. His unit moved in support of this Division's assault on the Southern portion of Okinawa. They have availed front line troops of speedy and expert medical attention. Affording the fighting man the best treatment known to Army medical science, the battalion's motto is: "Bring 'Em Back Alive."

Major John F. Eggers previous to landing on Okinawa, participated in the bitter fighting for Eniwetok and Saipan Islands. He then served as the Battalion Surgeon in the Knickerbocker Infantry Regiment. For meritorious service during the action on Saipan, he was awarded the honored Bronze Star Medal.

His orders to report for active service, from an Army reserve commission, came from the 6th Corps Area, Chicago, Illinois, in March 1941. He served for some time at Fort McClellan, Alabama, before coming overseas in March 1942.

Prior to his Army days, Major Eggers practiced surgery and medicine in Sycamore, Illinois for 2½ years. He was associated with the Sycamore Municipal Hospital and St. Mary's Hospital of De Kalb, Illinois. He is a graduate of Northwestern University.

HENRY COUNTY

Speedy evacuation of battle-wounded soldiers to the 52nd General Hospital in England and their physical and mental reconditioning has been directed by Major Peter J. Doering, a practicing physician of Geneseo before entering

the army in September, 1942. He was appointed rehabilitation coordinator for the 12th hospital center in addition to his duties as executive officer of the general hospital.

LAKE COUNTY

Lt. Cmdr. Lawrence C. Day, formerly of Grayslake, is the senior medical officer aboard a ship in the Pacific after spending 23 months in the Atlantic. He entered the service early in 1940 and was attached to the USS Kilauea, prior to Pearl Harbor. He wears the European-African-Middle Eastern, American and Asiatic-Pacific Area ribbons.

LAWRENCE COUNTY

Major Malcolm C. Todd of Lawrenceville and Miss Ruth Schlake of Chicago were recently married in St. Margaret's Church, Westminster, London. They met while both were working at the 297th general hospital in England which is an affiliated unit of County Hospital in Chicago. Guests at the church included Lt. Col. Chester C. Guy of Chicago, the hospital's chief of surgical service and Major Hampar Kelikian of Chicago, chief of Orthopedics.

MC LEAN COUNTY

Sydney S. Schochet, Captain M.C., of Bloomington was recently awarded the Purple Heart and one Oak Leaf Cluster.

PEORIA COUNTY

Carl E. Sibilsky of Peoria, serving with the largest U. S. Army general hospital in the European Theater of Operations for the last 18 months, has been promoted from captain to the rank of major. His unit is now operating in the Paris area.

Lt. W. B. Werner, Pekin physician who has been in the Pacific area for the past 16 months as a navy flight surgeon, has just arrived in the United States.

Charles Digges Branch of Peoria has been promoted to the rank of Lt. Commander.

Henry Sargent Howard of Peoria has just received a commission in the Navy and reported to a station in San Francisco.

SANGAMON COUNTY

Promotion of Captain William J. Morginson of Springfield to Major has been announced by Col. Robert M. Hardaway, commanding officer of Bushnell General Hospital, Brigham City, Utah, where Major Morginson is stationed. He is chief of the dermatology subsection and venereal control officer at the hospital.

VERMILION COUNTY

Washburn's Island near Camp Edwards, Mass., where thousands of troops trained for the beachhead landings they later made in Africa, Europe and the Southwest Pacific, is now being used for the treatment and recreation of combat veterans who are patients at the convalescent hospital there.

Col. Holland Williamson, Medical Corps, Commanding Officer of the Convalescent Hospital, announced the new utilization of Washburn's Island today. Dr. Williamson was a practicing physician in Danville.

He asserted it would be used primarily for therapeutic treatment of convalescent soldiers. It will also be the scene of fishing, boating, swimming and other recreational programs.

WINNEBAGO COUNTY

Major John S. Bralliar, formerly of Rockford, Ill., and now commanding officer and chief surgeon of a portable surgical hospital in the Philippines, was recently awarded the Bronze Star "for meritorious service on Luzon." Dr. Bralliar graduated from the University of Tennessee College of Medicine, Memphis, in 1939 and entered the service Dec. 4, 1940.

GENERAL

ADAMS COUNTY

J. E. Miller of Quincy has been seriously ill and is still confined in St. Mary's Hospital.

Walter Davidson of Liberty and Hugh M. Tarpley and Walter Stevenson of Quincy have been appointed as members of the new County Health Board.

COOK COUNTY

Max Thorek addressed the joint meeting of the Knoxville County Medical Society and the Tennessee division of the United States Chapter of the International College of Surgeons, June 8th at Knoxville, Tennessee, on "Surgical Plagiarism, its Etiology, Manifestations and Cure."

Plans are in progress for a $750,000 addition to Ravenswood Hospital, 1917 West Wilson Avenue, Chicago. The addition will provide space for between 85 and 100 beds bringing the institution's total capacity to 250 beds. It will permit expansion of laboratories, X-ray rooms and physiotherapy facilities.

A meeting of the Western section of the Medical Group Practice Council was held at the Palmer House, Chicago, June 6-7, with Dr. Samuel Bradbury, Philadelphia, as chairman. At the luncheon meeting on June 7 Dr. Kingsley Roberts of the Medical Administration Service,

New York, presided. Drs. Morris Fishbein and Victor Johnson of the American Medical Association were guests, and Clarence Rufus Rorem, Ph.D., director of the Hospital Plan Commission of the American Hospital Association, also attended. This council is organized under the auspices of the Medical Administration Service, Inc., to promote the extension and improvement of medical group practice by preparing and disseminating publications regarding the standards, procedures, problems and values of this method of distributing medical care.

HENRY COUNTY

Worling Young of Geneseo was recently elected president of Henry County Medical Society. W. R. Smith of Kewanee was named vice-president and P. J. McDermott also of Kewanee was re-elected Secretary.

IROQUOIS COUNTY

George W. Ross was installed as mayor of Watseka on May 14.

JACKSON COUNTY

Charles E. Riseling was given a dinner May 2 in honor of his fifty-two years' service to Murphysboro and of forty-eight years' service as a member of the staff of St. Andrew's Hospital, of which he became one of the original members when it was founded in 1897.

MC LEAN COUNTY

On June 1, Edwin Marrell Minnick of Danvers, completed fifty years in the practice of medicine in Illinois. He was awarded the fifty year button and certificate of the Illinois State Medical Society at the June 12th meeting of McLean County Medical Society.

WILLIAMSON COUNTY

W. I. Lewis of Herrin was recently elected President of the Williamson County Health Council.

MARRIAGES

HOWARD CARRINGTON, Onarga, to Miss Lucy Jane Hooker of Lebanon, Mo., in Camp Anza, Calif., recently.

JULIAN PETER KRAKOWSKI, Waterloo, to Miss Fern Zinser of El Paso, April 14.

JOHN T. SULLIVAN, JR. to Dr. Tullia D. TeSauro, both of Chicago, May 30.

GUY PARRY YOUMANS, Chicago, to Miss Anne Louise Stewart of Springfield, Mo., in Winnetka, March 17.

DEATHS

ARTHUR J. BEHRENDT, Chicago; University of Illinois College of Physicians and Surgeons, 1891. Served on the staffs of St. Elizabeth and Grant Hospitals and Municipal Tuberculosis Sanitarium, and was surgeon of the U. S. Steel Corp. north branch for 48 years. Died in Evanston Hospital, June 10th at the age of 79.

HARRY FRANKLIN BENNETT, Litchfield; Bennett College of Eclectic Medicine and Surgery, 1895. Served as Captain in World War I. Died from a cerebral hemorrhage May 18, aged 73.

NATHAN LEANDER BOURNE, Decatur; Barnes Medical College, St. Louis, Mo., 1903. Had specialized as otolaryngologist in Decatur for 41 years. Died May 17 at the age of 71.

OSCAR CARAKER, Olmsted; St. Louis College of Physicians and Surgeons, St. Louis, Mo., 1908. Had practiced medicine in Olmsted for 37 years. Died following a heart attack in the Cairo Hospital May 22, aged 65.

RUFUS G. COLLINS, Chicago; Northwestern University Medical School, 1885. Had practiced medicine in Chicago since graduation. Died in Michael Reese Hospital June 24th, aged 86.

HERSCHELL V. DONOVAN, Cerro Gordo; St. Louis College of Physicians and Surgeons, 1895. Died June 3rd, at the age of 73.

SAMUEL BECK HERDMAN, Taylorville; Rush Medical College, 1909. Was major in World War I. Had been chief surgeon for the Peabody Coal Company in the Midland Field since 1932. Past president of the Christian County Medical Society. Died May 18th at the age of 63 years.

JAMES PAUL JOHNSTON, East Moline; University of Illinois College of Medicine, 1922. Served in World War I as a member of the student army training corps at Iowa University where he was enrolled in the school of medicine. Narrowly escaped death in an automobile accident on February 24th. Died of cerebral thrombosis in Hines Hospital June 10th at the age of 51.

LEON K. LEIGH, Chicago; National Medical University, Chicago, 1898. Practicing physician in Chicago's loop for 47 years. Died June 13th, aged 75.

CARL FREDERICK LEWIS, Jerseyville; Bennett College of Eclectic Medicine and Surgery, 1909. Had practiced medicine in Jerseyville for 25 years. Was stricken with a heart attack and moved to St. Mary's Hospital, St. Louis. Died May 31st at the age of 61.

JAMES CLAUDE MCLALLEN, Cicero; Jenner Medical College, Chicago, 1909. Had practiced medicine in Cicero for 34 years. Died June 14th at the age of 68.

JAMES DONAL O'CONNOR, Peoria; St. Louis University School of Medicine, 1930; commissioned a captain in the Army Medical Corps Aug. 31, 1942; as-

sstant chief of medical service at the Air Force Base Hospital at Eglin Field, Fla. Died in Coral Gables, Fla., Feb. 24th, aged 39.

THEODORE HERBERT PAGE, retired, Peoria; Rush Medical College, 1897. Died June 11th, aged 70 in Tucson, Arizona where he had been the past 8 months.

BEN PARMENTER, retired, Keensburg; Barnes Medical College, St. Louis, Mo., 1909. Died May 10th, at the age of 64.

PETER H. POPPENS, Princeton; Rush Medical College, 1920. Died of injuries suffered in an automobile accident June 8th at the age of 55.

WILLIAM F. SCHAARE, River Forest; College of Medicine and Surgery, Chicago, 1902. Former commander of Columbia camp 2, United Spanish War Veterans, department surgeon for Illinois, and national president of the 7th Army Corps Veterans' association. Died June 19th at the age of 69.

KENNETH M. SEARS, formerly Elburn physician, major in the Army Medical Corps; Rush Medical College, 1931. Entered service in January, 1942 going to Camp Grant. Went overseas with his unit in Sept., 1944, became ill at the front and was returned to this country January 20th. Died, from an ailment incurred overseas June 2nd, at the age of 41.

BENJAMIN FRANKLIN STEELY, Louisville; Hospital College of Medicine, Louisville, Ky., 1907. Had practiced medicine in Clay county for nearly 38 years. Died in St. Anthony's Hospital, Effingham, May 18th, aged 64.

ALBERT T. SUMMERS, Mattoon; Kentucky School of Medicine, Louisville, 1903. Died in Washington, D. C. Hospital June 2nd at the age of 68.

JAMES J. TOALSON, East Alton; St. Louis College of Physicians and Surgeons, St. Louis, Mo., 1897. Formerly practiced medicine at Peoria. Died after a long illness on May 31st at the age of 72.

THEODORE H. TRAPPE, New Athens; St. Louis College of Physicians and Surgeons, 1910. Member of the Belleville Branch of the St. Clair County Medical Society. Died June 13th at the age of 67.

GEORGE W. WALBRIGHT, Metropolis; St. Louis University School of Medicine, 1930. Practiced medicine in Danville for 7 years, then entered the service as captain in 1941 serving as ship surgeon in the Hawaiian, Canton and Fiji Islands. Was discharged in 1943. Died suddenly May 24th at the age of 37.

WILLIAM K. WEST, Hinsdale; Wayne University College of Medicine, Michigan, 1889. Until 1928 he was chief surgeon for the Copper Range Mining in Upper Michigan. Died June 16th at the age of 79.

SURVEY SHOWS INTEREST IN INDUSTRIAL MEDICAL PRACTICE GROWING

About one-fourth or 4,215 of the medical officers answering a recent questionnaire indicated that they wished to enter the field of industrial medicine when they returned to postwar civilian practice, Lieut. Col. Harold C. Lueth, Medical Corps, Army of the United States, reports in the May 12 issue of *The Journal of the American Medical Association*. The questionnaire was prepared by the Committee on Postwar Medical Service of the American Medical Association to determine the future desires of medical officers. It was distributed to each medical officer on active duty with the Army, Navy, Public Health Service and Veterans Administration.

Of the 4,215 doctors who were interested in industrial practice of medicine, there were 863 who wanted full time positions and 3,352 who wanted part time positions. There were 484, or 56 per cent, who wanted special training in the field, and 379, or 44 per cent, who did not want special training. The greatest number of requests for special training came from the youngest graduates.

Interest in the practice of industrial medicine has been constantly growing among the medical profession and for purposes of future planning, Colonel Lueth points out, it is desirable to have an estimate of the likely status of industrial health in the future. An analysis of the figures shows that about four times as many men wanted part time positions in industrial medicine as wanted full time positions. Special courses in industrial health were requested by a total of 1,809 medical officers. They included men who desired full time positions in industrial medicine, men who desired part time positions in industrial medicine and men who were undecided about future positions in industrial medicine.

Tuberculosis is an infectious contagious disease. Fundamentally its control depends upon the control of the tuberculous patient who may spread the disease to those about him. For that purpose it is vital to know who has tuberculosis and to employ means to find the unknown cases in the community. The first step in finding new cases is to examine those individuals with whom the known tuberculosis patient was closely associated, especially in the home. The next is the examination of individuals who complain of symptoms referrable to the lungs. Even under ideal conditions, where these two steps are carried out with maximum efficiency, there still remain in the community large numbers of unknown cases of tuberculosis. These hidden cases for the most part have no characteristic symptoms or signs and, in the vast majority, only an X-ray of the lungs will disclose the disease. Recent advances in X-ray equipment and techniques, especially the so-called miniature film method, have made possible the X-raying of large groups of individuals for the purpose of finding these undiscovered cases of tuberculosis. William Siegal, M.D., "Health News," Nov. 13, 1944.

P. R. N.

The Jocular Jingles of C. G. F.

by

Charles G. Farnum M. D.
Peoria, Ill.

INDIAN NAMES

I've driven through our Northern States,
Past towns and lakes and rivers,
With names so unpronounceable,
My voice still quakes and quivers.

Indian names! Indian names!
I found them everywhere.
I should have worn a blanket
And feathers in my hair.

Wausaukee,
Pewaukee,
Bemidji and Milwaukee;
Ypsilanti, Escanaba,
Namakana, Waukenaba.

Monona,
Wautona,
Sheboygan, Kobetcona;
Onekama, Keosauqua,
Potawatomi, Minocqua.

Zumbrota,
Wissota,
Petoskey, Minneota;
Pokegama, Kakabeka,
Wantawagang and Sebeka.

Wadena,
Wawina,
Gogebic, Kishutena;
Waukesha, Onotonagon,
Weyenwega, Namakagon.

Itasca,
Kalkaska,
Saskatchewan and Chaska;
Ishpeming and Winnebago,
Okobogi, Maukwonago.

Kasota,
Dakota,
Kenosha and Eyota;
Capac, Mohawk and Cokato,
Kawishiwi and Mankato.

Kawnipi,
Mississippi,
Waupun, Kitchitikippi;
Seneca and Oscaloosa,
Maquoketa and Nekoosa.

Minni Wonka,
Minnetonka,
Petoskey and Tetonka;
Oskenonton, Chippewa,
Winneconne, Ottawa.

Saganaga,
Onandaga,
Negaunee and Menahga;
Sheboygan, Tomah, Neenah,
Muskegon, Okebena.

Manitowoc,
Oconomowoc,
Waupaca, Oshkosh, Tomahawk;
Minneiske, Saginaw,
Calumet and Manawa.

Sakatak,
Pontiac,
Caribou, Dowagiac;
Nipigon and Algonac,
Minnewaska, Mackinac.

Manistee,
Winnapea,
Saugatuck, Menomonie;
Mishawaka, Shakopee,
Wauwatosa, Cherokee.

Home in Peoria, Illinois again,
I visit Chillicothe and Kankakee,
Watseka and Mendota,
Kewanee and Sciota,
The valley of the Kickapoo for me!

I'm very sure that no one wholly blames
My horror at these northern Indian names.

THE RED HEADS

Efficiency,
Of the highest degree,
Has the nurse whose hair is red.
Most sparklingly
Brilliant, is she,
A halo about her head.

It may be the shade of burnished gold
Or the color of carrot puree;
It may be ravishing Titian hue
Or streaked just a bit with gray.

I don't care whether it's kinky or straight
Or gayly sparkles with brilliantine,
The russet red of an autumn leaf,
Or of sunlight, vespertine.

It may be auburn, sorrel or brick,
Or resemble an angora cat.
It may be golden as noon day sun,
Surmounting skinny or fat.

So when I'm sick,
And things won't click,
And I'm chucked in a hospital bed,
I will never object
To the nurse they select,
So long as her hair is red.

Professor Paresis asserts that a really considerate neighbor is one who can play a saxaphone and doesn't.

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